

Strawberry

STRATEGIC INVESTMENT PLAN

2017-2021



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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 organisation is tasked by the Australian Government 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 of preparing this SIP was managed by Hort Innovation and facilitated in partnership with Industry Representative Bodies and Strategic Investment Advisory Panels (SIAPs). 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 this SIP, especially strawberry growers.

The strawberry SIP

Producers in the strawberry 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 strawberries 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 strawberries is \$8 per 1,000 strawberry runners¹ and the Australian Government contributes to eligible expenditure on R&D. In 2015/16, total strawberry R&D levy receipts were approximately \$755,000.

The previous strawberry industry strategy can be summarised as:

- Improve industry sustainability and viability through year round production of fresh, consistent quality fruit for the domestic retail market
- » **Enabled by new varieties that match local conditions and are valued by consumers and growers**
- » **A focus on integrated pest and disease management (IPDM) practices.**

Hort Innovation has developed this new SIP for the strawberry industry to strategically invest the collected strawberry levy funds into the priority areas identified and agreed upon by the strawberry 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 strawberry industry's collective view of its R&D needs over the next five years (2017 to 2021). This plan has been developed in consultation with Australian strawberry levy payers through a synthesis of direct consultations with growers and a workshop with Hort Innovation's strawberry industry Strategic Investment Advisory Panel (SIAP). The people consulted in the preparation of the plan are listed in **Appendix 1** and the documents referred to in this report are listed in **Appendix 3**.

The strawberry 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 strawberry industry SIAP constituency please visit Hort

¹ Department of Agriculture and Water Resources (2016), 'Strawberry levy information', DAWR, Canberra <http://www.agriculture.gov.au/ag-farm-food/levies/rates/strawberry>.

Strawberry

STRATEGIC INVESTMENT PLAN

2017-2021 **AT A GLANCE**

POTENTIAL IMPACT OF THIS PLAN



Based on an estimated investment of \$7.06 million over the next five years.

OUTCOMES	STRATEGIES
By 2021, per capita domestic consumption of fresh Australian strawberries will increase by 10 per cent, underpinned by consistent supply of premium quality fruit that matches consumer desires	Conduct regular consumer research to gather insights and monitor perceptions and expectations towards fresh Australian strawberries
	Establish a methodology to measure and monitor the incidence of where quality is below consumer expectations
	Establish evidence of product health attributes and national industry practices that bolster the reputation of Australian strawberry businesses and its products
By 2021 increase exports of Australian strawberries from four per cent to at least eight per cent of national production by volume, in selected markets, with a capacity and willingness to pay a premium for quality fruit	Develop a strawberry export strategy during 2017 by working with current and potential exporting businesses
	Pursue technical market access for the priority markets identified in the export strategy
	Market development program in priority markets

OUTCOMES	STRATEGIES
Greater skills, capacity and knowledge in the industry	Ensure that superior strawberry varieties that match consumer expectations are available to growers
	Identify the regulatory imposts and those proven technologies and good management practices with greatest impact and ease of implementation to reduce cost of production/increase productivity
	Inform strawberry growers on the emerging options, risks and opportunities afforded by protected cropping systems
By 2021, at least 90 per cent of growers and other firms involved in the strawberry value chain will be directly engaged with and value national industry services	Continual improvement of integrated pest management (IPM) systems to meet pest and disease threats
	Develop an informed and cohesive industry through direct two-way communications with strawberry businesses across Australia
	Provide timely information on industry production, forecasts and markets

Strawberry

STRATEGIC INVESTMENT PLAN

2017-2021 AT A GLANCE

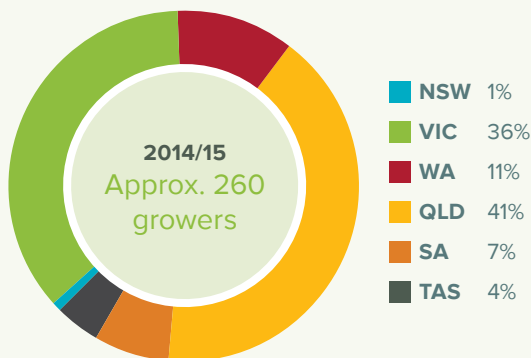
Major opportunities

- Improve technical access to existing and new export markets
- Value chain desire for strategic industry engagement to develop markets
- Move towards IPM and reduced inputs for production
- Development of new regions and supply periods for strawberry production in Australia
- Wider trend towards branding of agriculture products to target specific market segments
- Availability of technology to improve productivity at all stages of value chain.

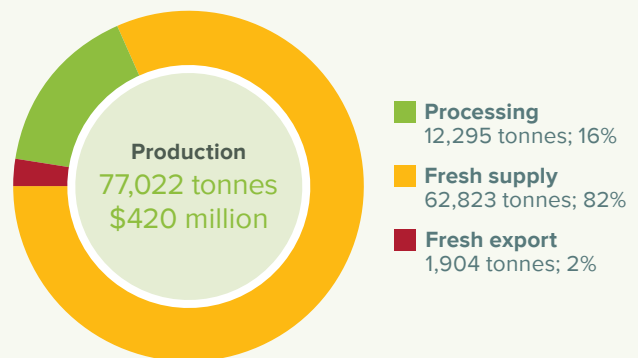
Major challenges

- Continued increases in domestic production could oversupply domestic market and impact on prices
- Potential market access for South Korean strawberries could impact on price and market share
- Biosecurity risks to plant health status, especially spotted wing Drosophila
- Increasing number of pest and disease issues with traditional growing methods such as charcoal rot
- Domestic-focused industry with limited export experience
- High costs of production including labour, relative to overseas competitors
- Lack of reliable, current time series data and information on strawberry production and market trends.

Industry size and production distribution



Strawberry supply chain and value 2014/15





SECTION ONE

Context

The Australian strawberry industry

Innovation's website at www.horticulture.com.au.

Australian strawberries are predominantly grown for the domestic fresh market and sold through retail and hospitality distribution channels. Production sources across most states enable year-round national supply, with most fruit being sold in branded punnets at retail outlets.

Fresh premium quality strawberries are the dominant product traded, with lower grades of fruit either unsaleable or sold for processing.

Nationally, over 90 per cent of strawberry runners selected by Australian growers are sourced from overseas, predominantly from the United States. Small quantities of runners are sourced from Israel, Japan and Australia.²

Despite two decades of high and sustained investment of grower R&D levies in the Australian Strawberry Breeding Program, there continues to be a relatively low level of industry acceptance of these varieties. Anecdotally, there are regional differences in the uptake of program varieties, with reportedly higher uptake levels in Queensland.

At a national level, strawberry varieties produced through Queensland and Victorian Departments of Primary Industries breeding programs are supplying less than 10 per cent of the national market.³ The new program has been directly tasked to increase this uptake.

Industry production

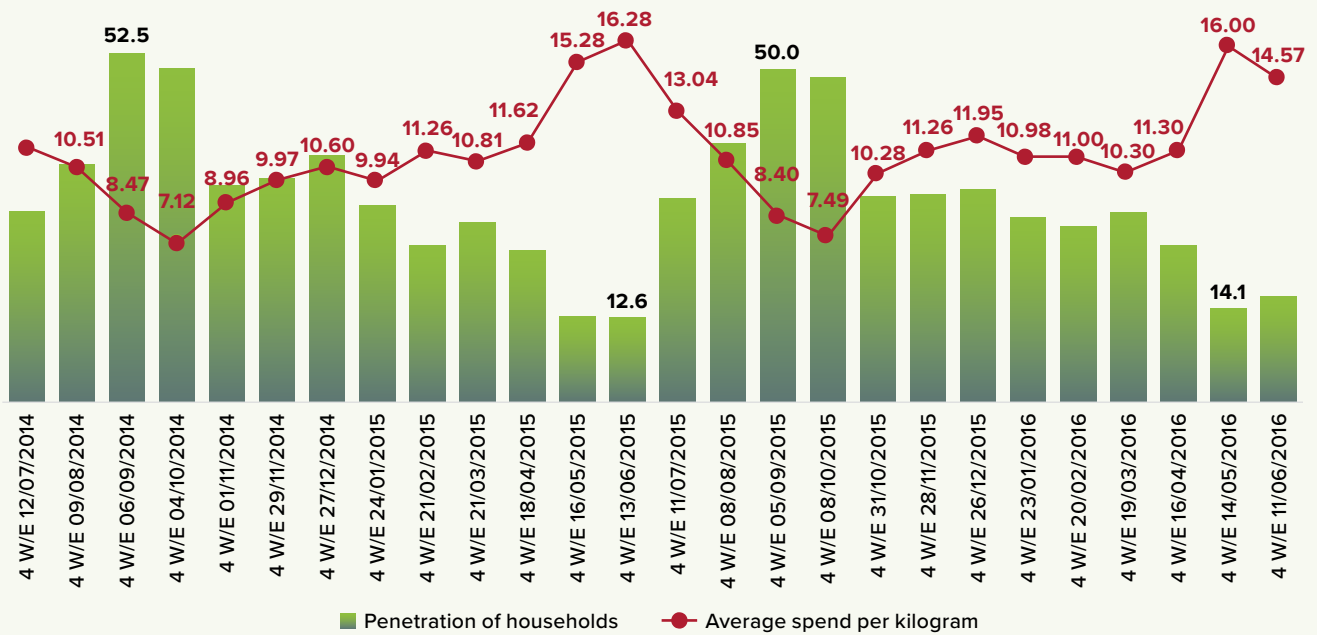
There are about 60 growers nationally and 600 growers in Queensland. The industry has been declining over the past decade, with consolidation of growers into fewer, larger businesses. National production has increased significantly over the past three seasons, with over 90,000,000 runners

² Strawberries Australia Inc (2012), *Strategic Investment Plan 2012 – 2017*, p. 15.

³ Ibid.

⁴ Horticulture Innovation Australia (2016) *Australian Horticulture Statistics Handbook 2014/15*, <http://horticulture.com.au/resource/australian-horticulture-statistics-handbook/>, p. 82.

Figure 2. Current strawberry trends of penetration of households compared to average spend per household every four weeks and average spend per kilogram.¹²



planted in the 2014/15 season. This has led to an estimated industry farm-gate value of about \$420 million.⁵ Improvements in strawberry yields as a result of research globally into plant health and the selection of superior varieties from overseas have contributed to this production increase.

Strawberries are grown in most states of Australia. Queensland and Victoria are the main production states having 77 per cent of production distributed between them. The remainder of production is sourced from Western Australia (11 per cent), South Australia (seven per cent), Tasmania (four per cent) and NSW (one per cent). Production is concentrated in coastal regions (see **Figure 1**), including:

- Adelaide Hills region in South Australia
- Beerwah and Stanthorpe regions in Queensland
- Camden region in New South Wales
- Sunshine Coast region of Queensland
- Wannaroo and Albany in Western Australia
- The Yarra Valley in Victoria.

Figure 1: Australia's major strawberry production regions⁶

Domestic consumption and demand

The Australian strawberry industry focuses on meeting demand from domestic consumers. Only around four per cent of national production is exported, of which about 90 per cent is from Western Australia.⁷

Food consumption levels in Australia are increasing per capita, and demand is forecast to continue rising in tandem with population growth (Australia's population is expected to reach 35.9 million by 2050).⁸ The implication is that organic growth of the strawberry industry can continue in the domestic market if demand is maintained.

However, despite an apparent increase in production from increased planting of runners in recent years, the domestic consumption of strawberries remains steady at around 2.6 kilograms per capita.⁹ These trends raise questions about the extent of variability of farm productivity performance, the extent of regional impacts of adverse climate events, and whether growers sell fruit during periods of low prices. The key implication is that domestic consumption and demand appear to have plateaued.

Notably, the production of strawberries in the United States

⁵ Ibid.
⁶ Horticulture Innovation Australia (2016) *Australian Horticulture Statistics Handbook 2014/15*, <http://horticulture.com.au/resource/australian-horticulture-statistics-handbook/>, p. 83.
⁷ Ibid.
⁸ Di Nunzio (2014), *Consumption Patterns and Food Demand in Australia to 2050* <http://www.futuredirections.org.au/publication/consumption-patterns-and-food-demand-in-australia-to-2050/>.
⁹ Horticulture Innovation Australia (2014) *Australian Horticulture Statistics Handbook 2014/15*, <http://horticulture.com.au/resource/australian-horticulture-statistics-handbook/>, page 82.

has been trending upwards for two decades. Such growth indicates that if supply is better aligned to meet consumer requirements, then a similar level of growth could be achieved in Australia.

Drivers of domestic consumption and demand

The current consumer trend towards healthy diets and fresh sustainable produce is likely to assist the strawberry industry with plans to expand domestically and internationally. Growth in consumption of strawberries in the domestic market has been driven by increasing expenditure by consumers,¹⁰ which has offset a decline in the number of buyers. At the same time, there is a trend of consumers switching their spending to purchase raspberries and blueberries. Nonetheless, strawberries are still able to drive value increase as existing buyers are increasing their spending, outweighing the marginal switch to other berries.

There is evidence that heavy buyers (more than 3.62 kilograms per year) account for 75 per cent of consumer expenditure on strawberries. Heavy buyers only represent one-third of total strawberry buyers, suggesting an opportunity for promoting quantity increase to light and medium buyers. If half of the light and medium buyers were to buy one extra time per year, this would add \$9.7 million of market value annually.^{11,12}

A major issue for the industry is that there are large fluctuations in prices throughout the year (see **Figure 2**).

In particular, the price of strawberries per kilogram is significantly lower in the spring months (August to October), where penetration of strawberries into households is at its highest.

Ensuring consistency of fruit quality continues to be an important issue, as sales of lower grade fruit risks a negative effect on prices and consumer confidence in Australian strawberries.

Imports

Imports of fresh strawberries have declined, totalling just 36 tonnes for the year ending June 2015. However, there are significant imports of processed strawberry products, with 7,437 tonnes imported for the year ending June 2015.¹³

Frozen imported berries were the source of Hepatitis A infections in 2015, which saw a national recall of products.¹⁴ Events of this nature often reinforce consumer preference for fresh Australian produce, at least in the short-term.

Australia has an existing import policy for fresh strawberries from New Zealand and the United States (California). Import volumes from these countries have been small in recent years, with 23 tonnes imported from New Zealand and 13 tonnes imported from other locations in 2015.¹⁵

The United States is the world's largest strawberry producer and second largest exporter of strawberries. In 2014, the United States exported 124.1 million kilograms of fresh strawberries, valued at US\$405.3 million, and 28.7 million kilograms of frozen strawberries, valued at US\$45 million.¹⁶

The majority of strawberries exported from the United States go to Canada.

A potential threat may be strawberry imports from Asia. Australia has strict biosecurity regulations, but there is currently a non-regulated analysis of existing DAWR policies to consider a proposal to import fresh strawberries from Korea into Australia.¹⁷

A high Australian dollar in recent years has meant that export growth is not fulfilling its potential. However, recent global financial changes have put downward pressure on the Australian dollar, which could make exporting more attractive.

10 Calculation based in part on Nielsen Homescan service for the Strawberry category for the week ending 11 June 2016 for the Australian market. Copyright©2016. The Nielsen Company.
11 Calculation based in part on Nielsen Homescan service for the Strawberry category for the week ending 11 June 2016 for the Australian market. Copyright©2016. The Nielsen Company. Calculations based on other household behaviour remaining constant.

12 Nielsen Homescan service for the Strawberry category for the 52 week period ending 11 June for the Australian market. Copyright©2016. The Nielsen Company.

13 Horticulture Innovation Australia (2014) *Australian Horticulture Statistics Handbook 2014/15*, <http://horticulture.com.au/resource/australian-horticulture-statistics-handbook/>, p. 86

14 Food Standards Australia New Zealand (2015), *Nanna's brand frozen berries (Mixed Berries and Raspberries)*, <http://www.foodstandards.gov.au/industry/foodrecalls/recalls/Pages/Nanna%27s-Mixed-Berries.aspx>

15 Horticulture Innovation Australia (2016) *Australian Horticulture Statistics Handbook*, <http://horticulture.com.au/resource/australian-horticulture-statistics-handbook/>, p. 86

16 Agricultural Marketing Resource Centre (2015), *Strawberries*, <http://www.agmrc.org/commodities-products/fruits/strawberries/>

17 Department of Agriculture and Water Resources (2016), *Biosecurity Advice 2016-09- Commencement of a non-regulated analysis of existing policy for fresh strawberry fruit*, DAWR, Canberra, <http://www.agriculture.gov.au/biosecurity/risk-analysis/memos/ba2016-09>

Export markets

Australia's strawberry exports are relatively limited, with majority of production consumed domestically and only 3.8 per cent of its total production exported.¹⁸ Australia's exports were 3,009 tonnes for the year ending June 2016, including processed product.¹⁹ The majority of strawberry exports come from Western Australia and is destined for markets in the Middle East and Asia. Exports have grown considerably over recent years increasing from 788 tonnes in 2013 to 1,467 tonnes and 1,904 tonnes in 2014 and 2015 respectively. There is potential for this export growth to continue with exports from both Western Australia as well as key eastern states.

A high Australian dollar in recent years has meant that export growth is not fulfilling its potential. However, recent global financial changes have put downward pressure on the Australian dollar, which could make exporting more attractive.

Australia has the opportunity to capitalise on the increasing food demand in Asia, especially as strengthening economies and population growth is creating the emergence of a large and growing middle class. Further, these consumers place a high value on food safety and integrity, and perceive Australia as a trustworthy source of quality food. Increasing food demand in the region has the potential to improve the agriculture industry's share of the national gross domestic product (GDP) in the post-mining boom economy,²⁰ and thus the export of strawberries can take advantage of these developments.

International market access

Australian agricultural industries have a locational advantage for exporting to Asia because of the close geographical proximity. The Australian strawberry industry supplies markets such as Singapore, United Arab Emirates, New Zealand, Hong Kong and Malaysia,²¹ with a total of 3,009 tonnes exported in 2016. Rising incomes per capita in these countries will drive consumption and increase the opportunity to attract premiums for high quality and consistent produce.

Technical and phytosanitary requirements (such as fruit fly free) of countries that import strawberries effectively exclude Australian strawberries from those markets. This creates a major barrier to the increase of Australia's export of strawberries. Establishing protocols to export strawberries to selected high value markets, such as China, would have a significant benefit for Australian strawberry growers. Given the highly perishable nature of berries, particularly strawberries, any agreed phytosanitary requirement treatment for strawberries would need to be short-term to allow quick movement of products from harvest to market.

Australia's strong biosecurity regulations and food integrity systems are an important part of the value proposition for high quality Australian strawberry exports. Recent disease outbreaks in overseas strawberry industries have increased the demand for Australian grown products.²² The strong reputation of quality and cleanliness of Australian strawberries helps to position the product as a preferred source.²³

There could also be opportunities for improved international market access from multilateral and bilateral trade agreements. If ratified, the Trans-Pacific Partnership (TPP) will provide measures to reduce non-tariff and tariff barriers to trade between Australia and eleven other nations. Australia's

Establishing protocols to ship strawberries to selected high value markets, such as China, would have a significant benefit for Australian strawberry growers.

free trade agreements with China, Japan, New Zealand, South Korea, Thailand and the United States also signify

18 Department of Primary Industries, Parks, Water and Environment (2015), *Strawberry Market Profile*, DPIPWE, Tasmania, <http://dpiuwe.tas.gov.au/Documents/Strawberry%20Profile%20updated%20March%202014.pdf>

19 Ibid.

20 Di Nunzio (2014), *Consumption Patterns and Food Demand in Australia to 2050*, <http://www.futuredirections.org.au/publication/consumption-patterns-and-food-demand-in-australia-to-2050/>

21 Horticulture Innovation Australia (2014) *Australian Horticulture Statistics Handbook 2014/15*, <http://horticulture.com.au/resource/australian-horticulture-statistics-handbook/>, p. 85.

22 Dynamic Export (2015), *Strawberry market in China collapses amid health fears*, <http://www.dynamicexport.com.au/export-market/articles-export-markets/Strawberry-market-in-China-collapses-amid-health-fears/>

23 Ibid.

potential opportunities for tariff-free trade of strawberries into large consumer markets that have a capacity and willingness to pay for premium quality strawberries.

Productivity and competitiveness

Strawberry growers must carefully select the plant type, planting date, mulch colour, fertilisation, variety, and plant density that will maximise the yield whilst optimising plant health and fruit size. At the same time, input costs, particularly labour, have a significant impact on-farm profitability.

Gross margin analysis conducted by the industry in 2014²⁴ indicates that Australian strawberries have an estimated harvest yield of 37,500 kilograms per hectare, with an (assumed) gross price per kilogram of \$9.00.

The default yield is based on 50,000 plants per hectare, and a yield of 0.75 kilograms of Class 1 fruit per plant.

As production and competition from other fruits (and potentially from strawberry imports) increases, it creates pressure for businesses across the whole value chain to improve productivity.

Industry information and knowledge

With a farm-gate value of \$420 million annually, the Australian strawberry industry is a significant horticultural industry. However, there is limited availability of current, reliable data and information describing industry characteristics, the various markets for its products and trends with consumers. For example:

- Industry production and trend, such as time series data on the number of producers, volumes produced regionally and nationally, farm financial performance, productivity and varieties grown
- Markets trends and intelligence, such as volumes and value of sales to retail, food service and exports and competitor trends
- Consumer insights, such as evidence of changing patterns of demand and consumption, for domestic consumers.

The timely availability and access to such baseline information is fundamental for good decision-making at the industry policy level and for growers and other value chain businesses.

24 Mary Bennett (2014), *Profitability and Gross Margin Analysis - Strawberries*, Department of Primary Industries, Parks, Water and Environment, Tasmania dipwwe.tas.gov.au/Documents/Strawberry-GM.xls

Operating environment

		The strawberry industry	
The strawberry industry		Opportunities	Increase in supply provides capacity to meet demand
Strengths	<ul style="list-style-type: none"> Geographic proximity to growing markets in Asia Industry awareness and interest in developing exports, especially from August to October Diversity of production regions enable plentiful supply all year around Australian strawberries regarded as high-quality and 'safe' by Australian and overseas consumers High production standards across value chains Industry reputation for environmentally sustainable production Health authorities consider fruit as important to good health Established domestic demand for strawberries R&D levy funds available for production and consumer research Growers are important to the value chain Availability of new varieties from National Breeding Program and overseas suppliers Victoria state marketing levy Emergence of protected cropping and investment 	<ul style="list-style-type: none"> Improve technical access to existing and new export markets Consumers increasingly engaging with products during periods of peak production Increasing consumer demand for safe, clean food Increase in community association of natural foods Consumer awareness/expectation of environmental friendliness Supermarkets seeking security of supply Value chain desire for strategic industry engagement Consumer demand for consistent quality fruit, including organic Move towards IPM and reduced inputs for production Development of new regions and supply periods for production Overlap of strawberry consumers and value chains Wide trend towards branding of agriculture products Availability of technology to improve productivity and quality 	<ul style="list-style-type: none"> Continued increases in domestic production could reduce export capacity Well-resourced overseas competitors that can compete on price Potential market access for South Korean strawberries Biosecurity risks to plant health status, especially strawberries Competition from other fruits, especially other berries Supermarkets eroding supplier brands Reduced ease of access and higher cost for overseas consumers Consumer demand for assurance on product integrity Reputational damage when media (and online activity) reports on quality performance Climate change and variability in growing conditions Increasing number of pest and disease issues with strawberries Full removal of methyl bromide soil fumigation for strawberries increase risk of disease for fruit growers.
	<ul style="list-style-type: none"> Limited or no technical access to high value production techniques Domestic-focused industry with limited export capacity Concentration of buying power with two major buyers High costs of production including labour requirements Variable productivity across Australian growing regions Limited awareness about Australian strawberries Production vulnerability to seasonal variations Limited objective evidence of strawberry industry performance Lack of reliable, current time series data and analysis Declining access to chemicals needed for crop protection Variability in quality and shelf life leading to inconsistent supply Limited insights into specific consumer quality requirements Limited national industry cohesion and capacity to strategically manage relationships, issues, communications High levy investment with low uptake of varieties supplied from the National Breeding Program Lack of a current viable soil fumigation program following removal of methyl bromide. 		

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SECTION TWO

Strawberry industry outcomes

Industry outcomes

OUTCOME 1

By 2021, per capita domestic consumption of fresh Australian strawberries will increase by 10 per cent, underpinned by consistent supply of premium quality fruit that matches consumer desires

Returns to growers are highly dependent on a vibrant domestic retail market. Rising strawberry production and competition from other berries and fruits is placing downward pressure on strawberry prices. Supply is increasing faster than domestic demand and in the past three years per capita consumption has plateaued at 2.6 kilograms per person.

The pathway to achieving this outcome involves investment of R&D levies across several intermediate steps:

- Establish and maintain a deep understanding of strawberry consumers and the product attributes each consumer segment values most
 - Meet or exceed consumer expectations for consistent premium quality strawberries at point of sale
 - Support premium product positioning with evidence of beneficial product health attributes and responsible industry production practices
 - Shared market knowledge and insights that are valued by grower and value chain businesses and used in business decisions
- » **Underpinned by communication and adoption plans designed and implemented with grower involvement.**

OUTCOME 2

By 2021, increase exports of Australian strawberries from four per cent to at least eight per cent of national production by volume, in selected markets with a capacity and willingness to pay a premium for quality fruit

The strategic intent is to diversify into selected export markets as a means of reducing the industry's dependency on the domestic market, especially during seasonal periods of peak domestic supply. Achieving this outcome will involve:

- Preparing an export strategy that identifies and prioritises export markets where there is a willingness and capacity to pay a premium for quality Australian strawberries
- Knowledge of product attributes valued by strawberry consumers in the importing country
- Application knowledge by growers and value chain businesses to meet or exceed consumer expectations for consistent premium quality strawberries
- Support of premium product positioning with evidence of healthy product attributes and Australia's responsible industry production practices and integrity systems.

Importantly, this outcome involves both building on existing export market growth as well as targeting specific seasonal windows (August to October) where success would help increase overall industry profitability and contribute to Outcome 1.

OUTCOME 3

By 2021, the industry will increase farm productivity (marketable yield per hectare) by an average 10 per cent

The strategic intent is to identify, document and promote production practices that are proven to optimise returns and reduce risk to growers. Achieving the outcome will involve:

- Confirming the current average baseline productivity level/s
- Application of technology and targeted information to help reduce costs such as labour, improve consistent quality and reduce the impact of climate variability such as protected cropping systems
- Use of superior strawberry varieties valued by consumers and growers.

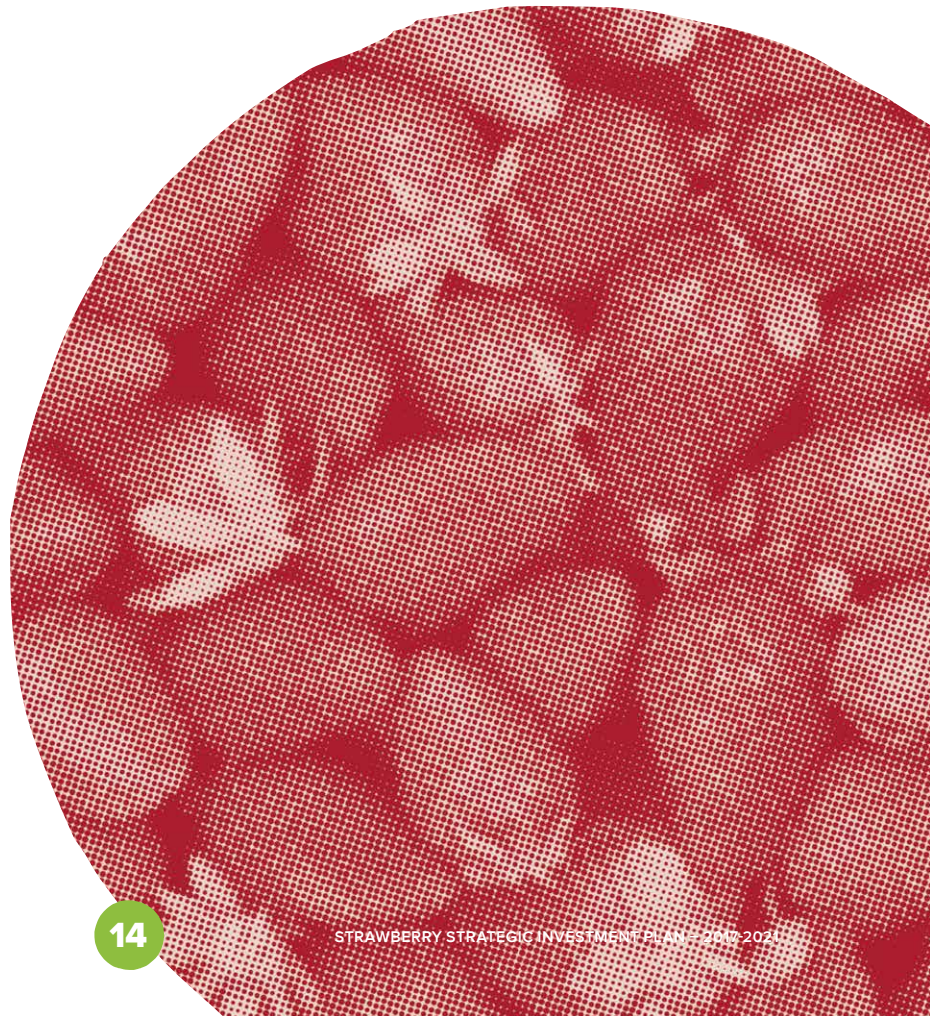
Productivity improvement may include: producing more marketable strawberries per hectare with the same inputs; producing the same yield per hectare with lower inputs; or where the same inputs produce a higher value crop, for example, with more consistent and superior eating quality.

OUTCOME 4

By 2021, at least 90 per cent of national production and 90 per cent of growers and other firms involved in the strawberry value chain will be directly engaged with and value national industry services

The strategic intent is to build a powerful and responsive capability for collection, analysis and rapid flows of timely information that is used to inform business decisions and delight the customers of the industry. It's about tailored information services that are designed from the outset to meet the needs of different grower 'segments', that is, demand-based approach.

Achieving this outcome underpins the capability to achieve all outcomes and particularly Outcome 1. As a consolidating industry with increasing production and competition, industry information systems and responsive national services will be vital for effective implementation and high performance.





SECTION THREE

Strawberry industry priorities

Industry investment priorities

These industry outcomes, strategies and deliverables have different levels of priority. 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. The strategy for the next five years influences the setting of priorities for investment and can be summarised as:

1. Fostering industry growth based on a deeper understanding of domestic consumers
 - » **Aligning supply of consistent quality fresh strawberries for the domestic market, that is, sustain prices/reasonable returns as per capita consumption rises**
2. Developing exports in selected markets.

OUTCOME 1 – By 2021, per capita domestic consumption of fresh Australian strawberries will increase by 10 per cent, underpinned by consistent supply of premium quality fruit that matches consumer desires

STRATEGIES	POSSIBLE DELIVERABLES
Conduct regular consumer research to gather insights and monitor perceptions and expectations towards fresh Australian strawberries	Consumer insight reports that are shared with growers and other value chain firms
Establish a methodology to measure and monitor the incidence of where quality is below consumer expectations	Establish a national baseline of industry performance with meeting consumer quality expectations and track over time
Establish evidence of product health attributes and national industry practices that bolster the reputation of Australian strawberry businesses and products	Current and new knowledge on the positive health attributes of strawberries is available to health professionals and media Framework for assessing industry-wide performance in key areas of industry risk is developed by December 2017 Assessment that provides baseline information supporting the premium quality positioning of Australian strawberries

OUTCOME 2 – By 2021 increase exports of Australian strawberries from four per cent to at least eight per cent of national production by volume, in selected markets, with a capacity and willingness to pay a premium for quality fruit	
STRATEGIES	POSSIBLE DELIVERABLES
Develop a strawberry export strategy during 2017 by working with current and potential exporting businesses	An export strategy that is valued by strawberry businesses
Pursue technical market access for the priority markets identified in the export strategy	Relationships with industry and governments, supported by technical information that is used in decisions on market access
Market development program in priority markets	Market information and business relationships to facilitate trade

OUTCOME 3 – Greater skills, capacity and knowledge in the industry	
STRATEGIES	POSSIBLE DELIVERABLES
Ensure that superior strawberry varieties that match consumer expectations are available to growers	National Breeding Program varieties that are preferred by growers and consumers
Identify the regulatory imposts and those proven technologies and good management practices with greatest impact and ease of implementation to reduce cost of production/increase productivity	A national plan that prioritises opportunities for action to reduce on-farm costs of production/increase productivity
Inform strawberry growers on the emerging options, risks and opportunities afforded by protected cropping systems	Annual reporting on the systems being adopted and the proportion of national production through protected cropping
Continual improvement of Integrated Pest Management systems to meet pest and disease threats	IPM programs for key growing regions

OUTCOME 4 – By 2021, at least 90 per cent of growers and other firms involved in the strawberry value chain will be directly engaged with and value national industry services	
STRATEGIES	POSSIBLE DELIVERABLES
Develop an informed and cohesive industry through direct two-way communications with strawberry businesses across Australia	A national database of strawberry growers and value chain firms
Provide timely information on industry production, forecasts and markets	Weekly and monthly statistics on national and state production and trends

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 Government’s Rural RD&E Priorities and National Science and Research Priorities, to arrive at five investment priorities outlined in **Figure 3**. **Figure 3** also shows how each cross-sectoral investment theme relates to the five investment priorities.

Figure 3: Hort Innovation’s investment priorities



The alignment of strawberry SIP outcomes to the Hort Innovation investment priorities and as a consequence the Australian Government’s Rural RD&E Priorities and National Science and Research Priorities is shown in **Table 1**.

Table 1: Alignment of strawberry SIP outcomes to the Hort Innovation investment priorities

Hort Innovation investment priorities	Strawberry SIP outcomes
Support Industry efficiency and sustainability	
Improve productivity of the supply chain	By 2021, the industry will increase farm productivity (yield per hectare) by an average 10 per cent
Grow the horticulture value chain capacity	By 2021, at least 90 per cent of growers and other firms involved in the strawberry value chain will be directly engaged with and value national industry services
Drive long-term domestic and export growth	By 2021, increase exports of Australian strawberries from four per cent to at least eight per cent of national production by volume, in selected markets, with a capacity and willingness to pay a premium for quality fruit By 2021, per capita domestic consumption of fresh Australian strawberries will increase by 10 per cent, underpinned by consistent supply of premium quality fruit that matches consumer desires
Lead strategically to enhance the development of the Australian horticulture industry through operational excellence	Enabler



4

SECTION FOUR

Strawberry industry monitoring and evaluation

Strawberry SIP monitoring, evaluation and reporting

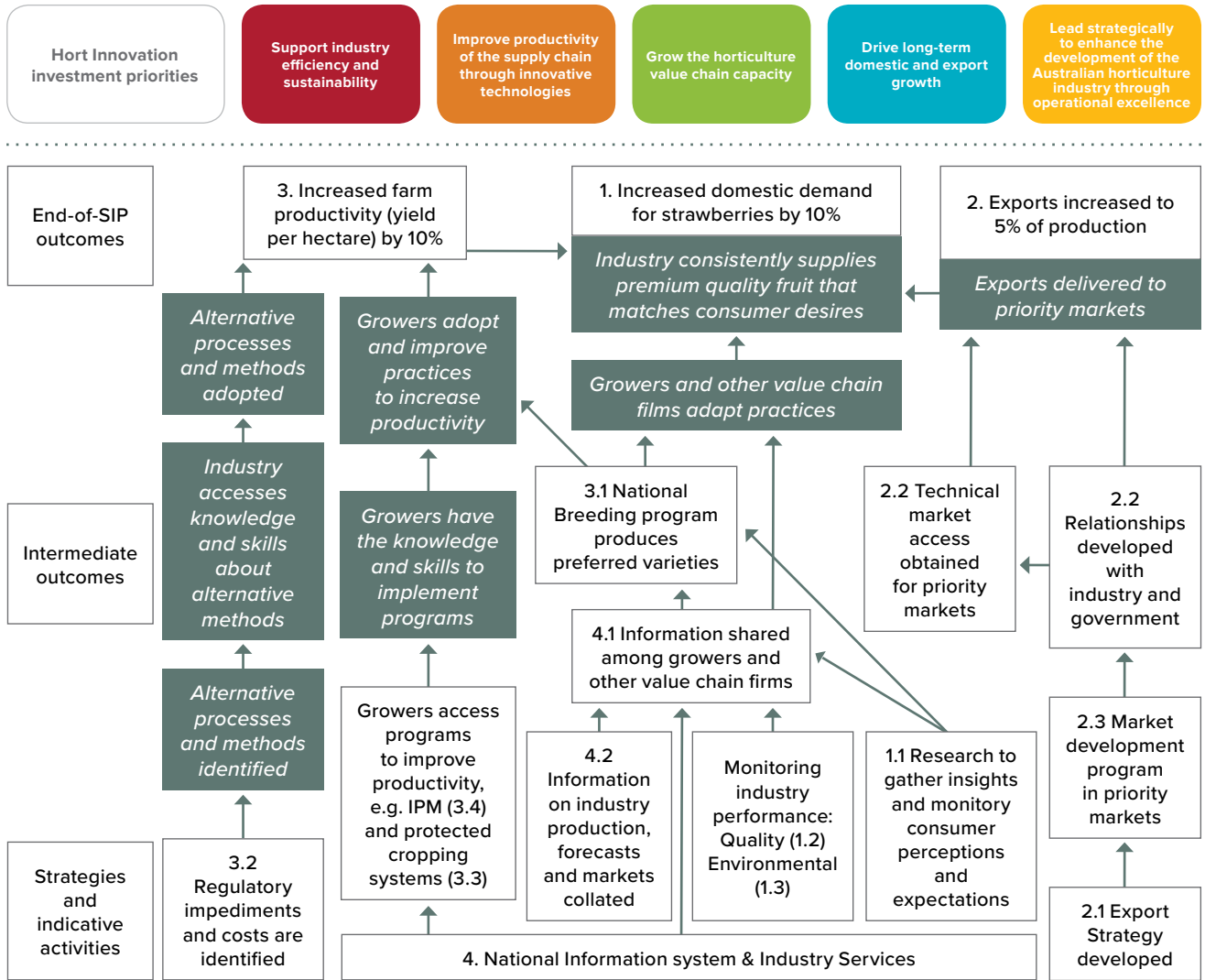
A SIP program logic and monitoring and evaluation (M&E) plan has been developed for the strawberry SIP. These are informed by the Hort Innovation Organisational Evaluation Framework. The logic maps a series of expected consequences of SIP investment. The M&E plan shows the performance measures that will be measured to demonstrate progress against the SIP and what data will 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.

Strawberry SIP logic

An indicative strawberry SIP program logic is shown below in **Figure 4**. The logic is based on the Hort Innovation SIP logic hierarchy (**Appendix 2**). The shaded boxes are not fully explicit in the strategy but necessary conditions for the achievement of expected outcomes.

Figure 4: Strawberry SIP logic



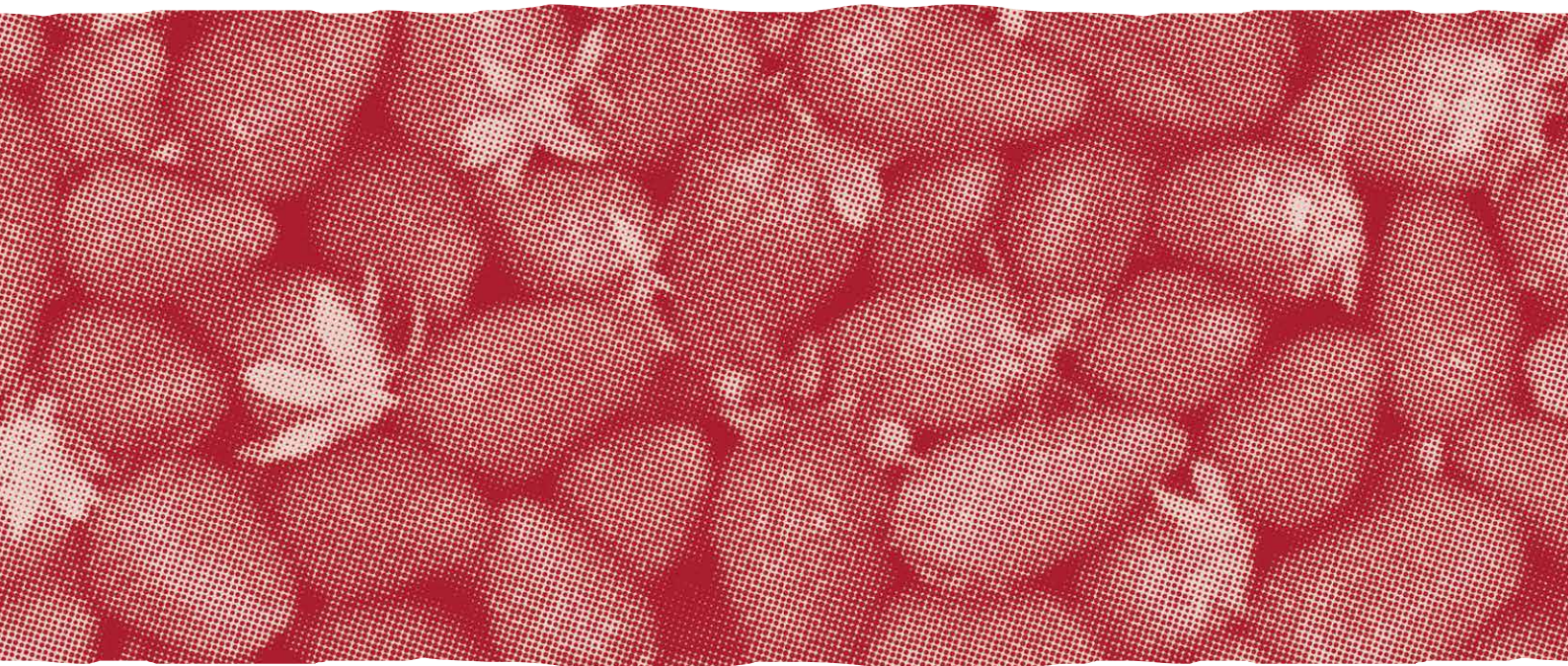
Strawberry SIP M&E plan

The strawberry M&E plan is shown in **Table 2**. 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 2: Monitoring and evaluation plan for the strawberry SIP

Outcome	Strategies	KPIs	Data collection methods and sources
<p>OUTCOME 1: By 2021, domestic demand for fresh Australian strawberries will increase by 10 per cent, underpinned by consistent supply of premium quality fruit that matches consumer desires</p>	Conduct regular consumer research to gather insights and monitor perceptions and expectations with fresh Australian strawberries	<ul style="list-style-type: none"> Quarterly reports on sales volume through major retailers with price tracking and consumer purchase frequency Majority of growers and majority of national production aware of consumer research findings Evidence of changed grower and value chain practices to align with consumer research findings Methodology developed and agreed with baseline information on quality performance Evidence of annual quality improvements against baseline levels (once set) Health attributes of strawberries for different consumers is available to and valued by health professionals Methodology for conducting environmental assessment developed and baseline set 	<ul style="list-style-type: none"> Retail and consumer behaviour/ attitudinal data Bi-annual grower survey Quality data Desktop research Research projects
	Establish a methodology to measure and monitor the incidence of where quality is below consumer expectations		
	Establish evidence of product health attributes and national industry practices that bolster the reputation of Australian strawberry businesses and its products		
<p>OUTCOME 2: By 2021 increase exports of Australian strawberries from four per cent to at least eight per cent, by volume, in selected markets with a capacity and willingness to pay a premium for quality fruit</p>	Develop a strawberry export strategy during 2017 by working with current and potential exporting businesses	<ul style="list-style-type: none"> Reports on the volume of exports show annual increases, reaching eight per cent of national production by 2021 Export strategy developed, with the involvement of export ready businesses Plans to pursue technical access in the three highest priority markets are agreed and implemented Export protocols established with priority markets Market development plans are in place and supported by exporters Evidence that importers in high value export markets are prepared to pay a price premium for Australian strawberries 	<ul style="list-style-type: none"> Australian Bureau of Statistics (ABS)/ GTA export statistics Grower survey and workshop Exporter survey Department of Agriculture and Water Resources Exporter survey Exporter survey and ABS export statistics
	Pursue technical market access for the priority markets identified in the export strategy		
	Market development program in priority markets		

Outcome	Strategies	KPIs	Data collection methods and sources
<p>OUTCOME 3: By 2021, the industry will increase farm productivity (marketable yield per hectare) by an average 10 per cent</p>	<p>Ensure that superior strawberry varieties that match consumer expectations are available to growers</p> <p>Identify the regulatory imposts and those proven technologies and good management practices with greatest impact and ease of implementation to reduce cost of production</p> <p>Inform strawberry growers on the emerging options, risks and opportunities afforded by protected cropping systems</p> <p>Continual improvement of IPMs to meet pest and disease threats</p>	<ul style="list-style-type: none"> Grower preference for runners supplied from the National Breeding Program increases from 10 per cent of all runners nationally to at least 25 per cent R&D quantifies and prioritises opportunities for action to reduce on farm costs of production Targeted extension programs in place to accelerate grower awareness and uptake of selected proven technologies in each growing region Growers choosing to invest in protected cropping are satisfied with R&D available on growing techniques for these systems Extent to which growers are choosing to use IPM instead of conventional crop protection 	<ul style="list-style-type: none"> Levy collection data Performance reviews of National Breeding Program Economic analysis Grower survey
<p>OUTCOME 4: By 2021, at least 90 per cent of growers and other firms involved in the strawberry value chain will be directly engaged with and value national industry services</p>	<p>Develop an informed and cohesive industry through direct two-way communications with strawberry businesses across Australia</p> <p>Provide timely information on industry production, forecasts and markets</p>	<ul style="list-style-type: none"> System for collecting and reporting on supply, forecasts and markets Evidence of increasing stakeholder satisfaction with quality and timeliness of information available for decision-making 	<ul style="list-style-type: none"> Grower survey Stakeholder survey Research project with stakeholder engagement Bi-annual grower and stakeholder survey

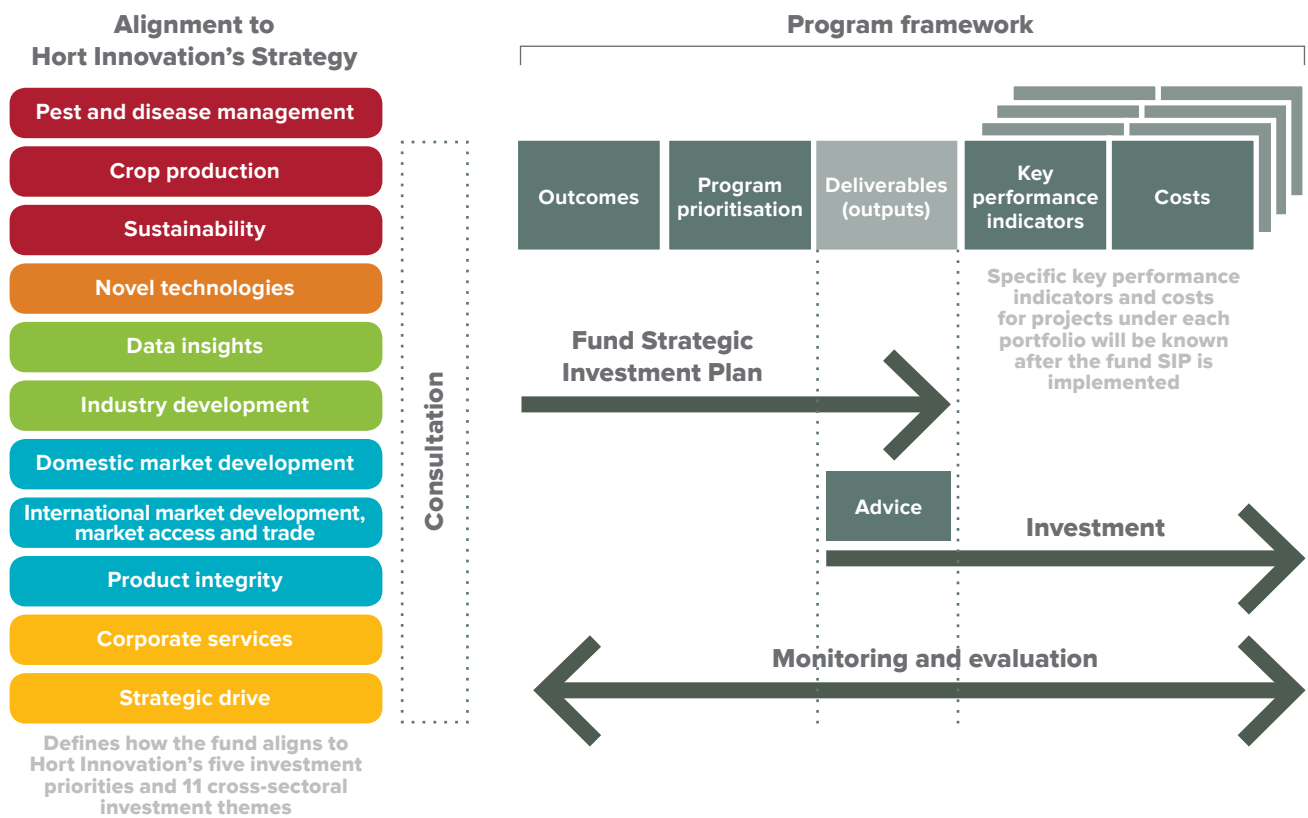


Reporting

The program framework in **Figure 5** 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 5: Hort Innovation’s program framework

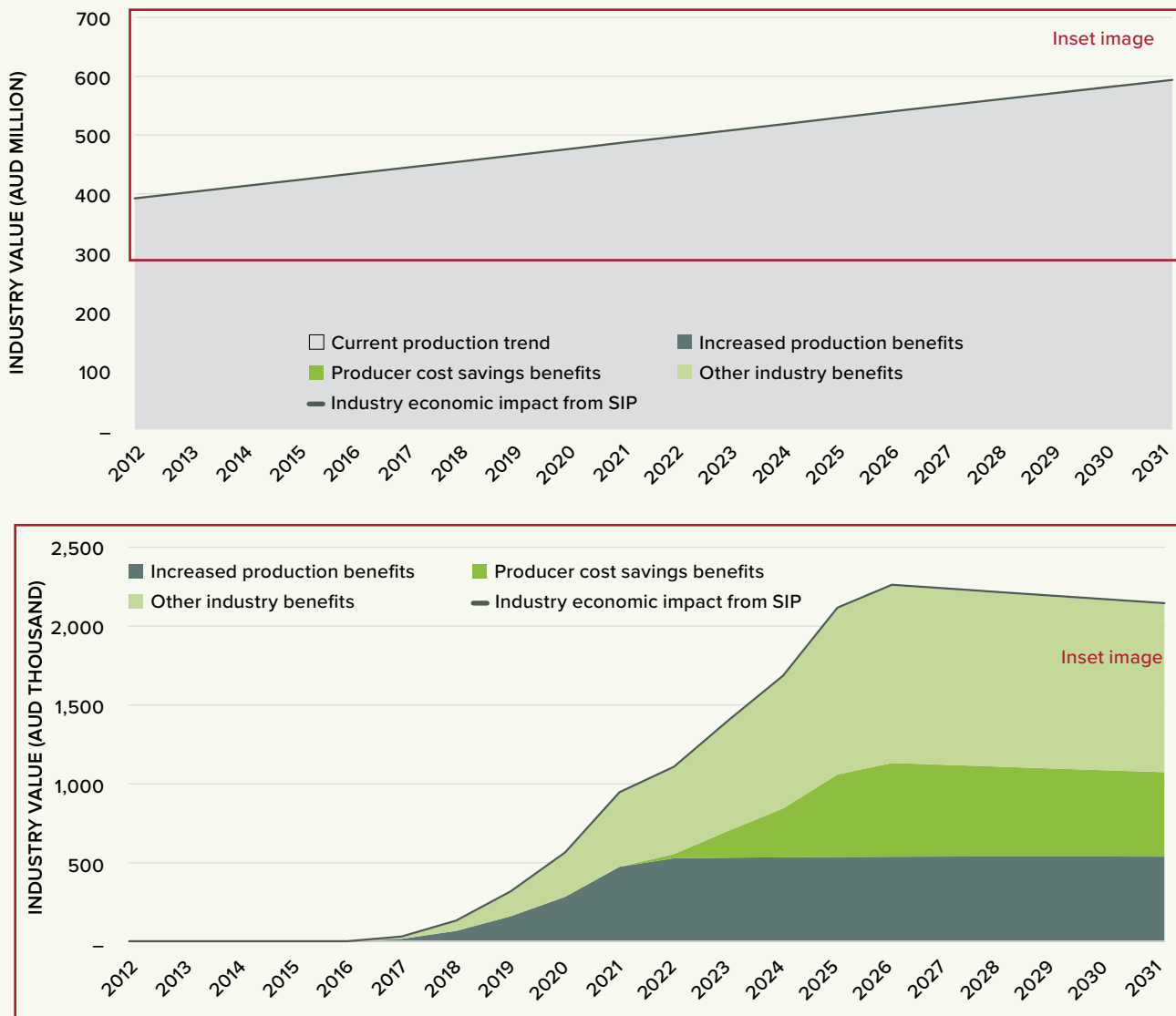


SECTION FIVE

Impact assessment



Figure 6: Economic benefit from investment in the SIP



An independent assessment of the potential economic impacts from investment into the strawberry SIP indicated a positive return on investment for the industry (Figure 6). The anticipated investment of \$7.06 million over the next five years in R&D and extension activities is expected to generate \$21.58 million in net benefits for the industry, representing a benefit cost ratio of 3.06 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 3 provides a summary of the assessed impacts for each outcome identified in the SIP, the anticipated deliverables, net economic benefits and benefit cost ratio.

Table 3: Summary of assessed impacts for each strawberry SIP outcome

Outcome	Expected deliverables	Anticipated SIP investment (over five years)	Net benefits (over 15 years)	Benefit cost ratio
Increase domestic consumption of Australian strawberries	Consumer insight reports, baseline of industry performance, health data for strawberries	\$1,411,103	\$3,063,104	2.17
Increase exports of Australian strawberries	Export strategies, technical access to priority markets and trade facilitation	\$2,116,654	\$9,658,942	4.56
Increase productivity	New strawberry varieties, new technologies for production, protected cropping and IPDM	\$3,527,757	\$8,859,202	2.51
<i>Underlying capability:</i> Engage stakeholders along value chain	Database of value chain stakeholders, statistics on national and state production trends	Cost integrated into Outcomes 1 to 3	Benefits calculated in Outcomes 1 to 3	Not applicable

The quantified impacts associated with Outcome 1 include:

- Market expansion from an increase in domestic consumption of strawberries per capita from better understanding consumer needs
- Price premiums from exceeding consumer expectations on quality and consistency.

The quantified impacts from Outcome 2 include:

- Market expansion from building on current export markets such as Singapore and New Zealand and entry into new export markets particularly in the Asian region
- Price premiums received from the export markets services which would need to be for high value products to offset the high production costs in Australia
- Increase in domestic prices due to the reduction of local supply which balances out the supply and demand in Australia.

The quantified impacts from Outcome 3 include:

- Yield improvements and market expansion from the development of new varieties that have better producer and/or consumer related characteristics

- Reductions of production inputs and increases in yield from the implementation of new technologies on the farm including new protected cropping technologies
- Reductions in crop losses and increases in yield due to improvements in IPDM.

The quantified impacts from Outcome 4 include:

- Improvements in the benefits generated from Outcomes 1 to 3 due to a greater capacity to support research and development, industry adoption and implementation with a unified industry body comprising of strawberry, raspberry, blackberry and blueberry. The benefits of Outcome 4 are integrated into Outcomes 1 to 3 as part of their overall return on investment.

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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 which in part are considered in the SWOT. This is also not reflective of the general investment risks which will be considered in the project investment process.

A major risk to the strawberry industry relates to the National Breeding Program. The industry has been investing a large portion of total R&D investment into the program for over two decades. However, the uptake of varieties from the program by strawberry farmers has been very low (around 10 per cent nationally). Anecdotally, higher uptake has been occurring recently in southern Queensland, although this needs to be validated by review.

If the industry continues to invest in the same way in the National Breeding Program without a fundamental and rapid change in the rate of uptake, it poses a significant risk to achievement of the outcomes agreed in this SIP.

A second risk is that the basic information needed to reliably describe industry scale and trends, measure progress, inform better decisions and influence behaviour change across the value chain has not been readily available in the past.

If the previous pattern of limited or intermittent availability of credible industry data continues it will greatly reduce the speed and effectiveness of the SIP implementation and measurement of what is being done and achieved.

If the industry continues to invest in the same way in the National Breeding Program without a fundamental and rapid change in the rate of uptake, it poses a significant risk to achievement of the outcomes agreed in this SIP.

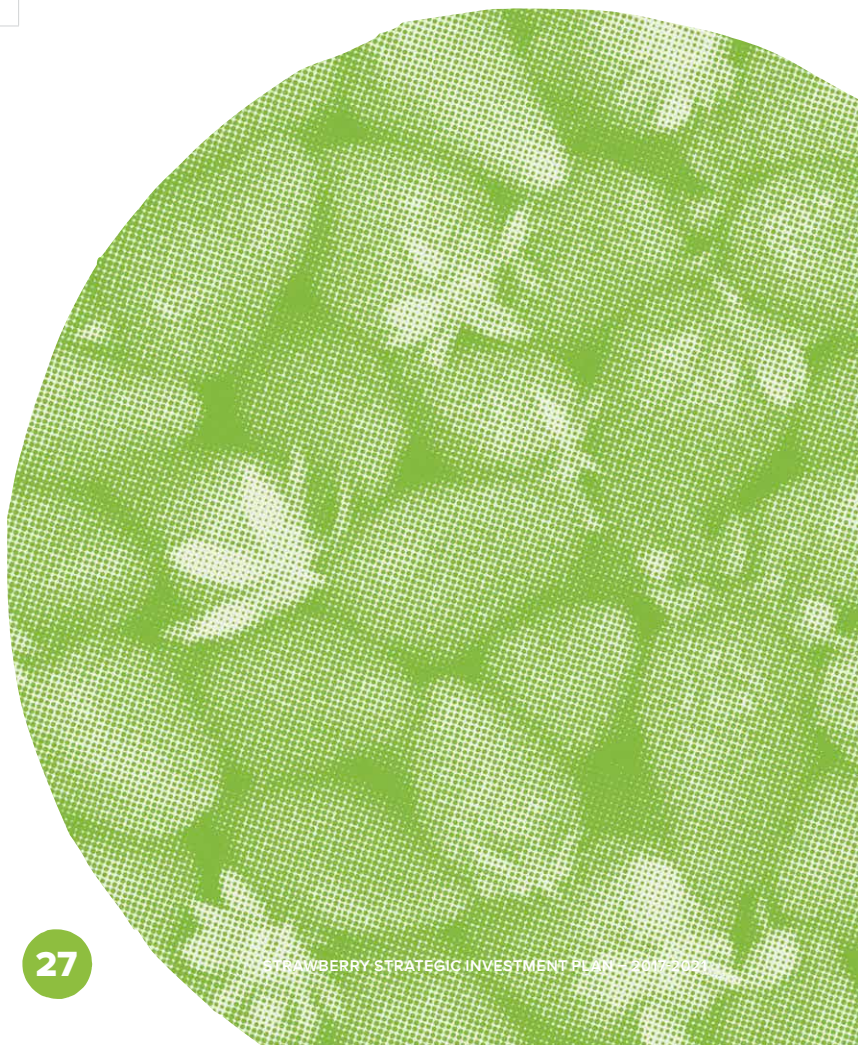
**APPENDIX 1:
Consultation and validation**

The following individuals were consulted during the development of this SIP (and their assistance is gratefully acknowledged).

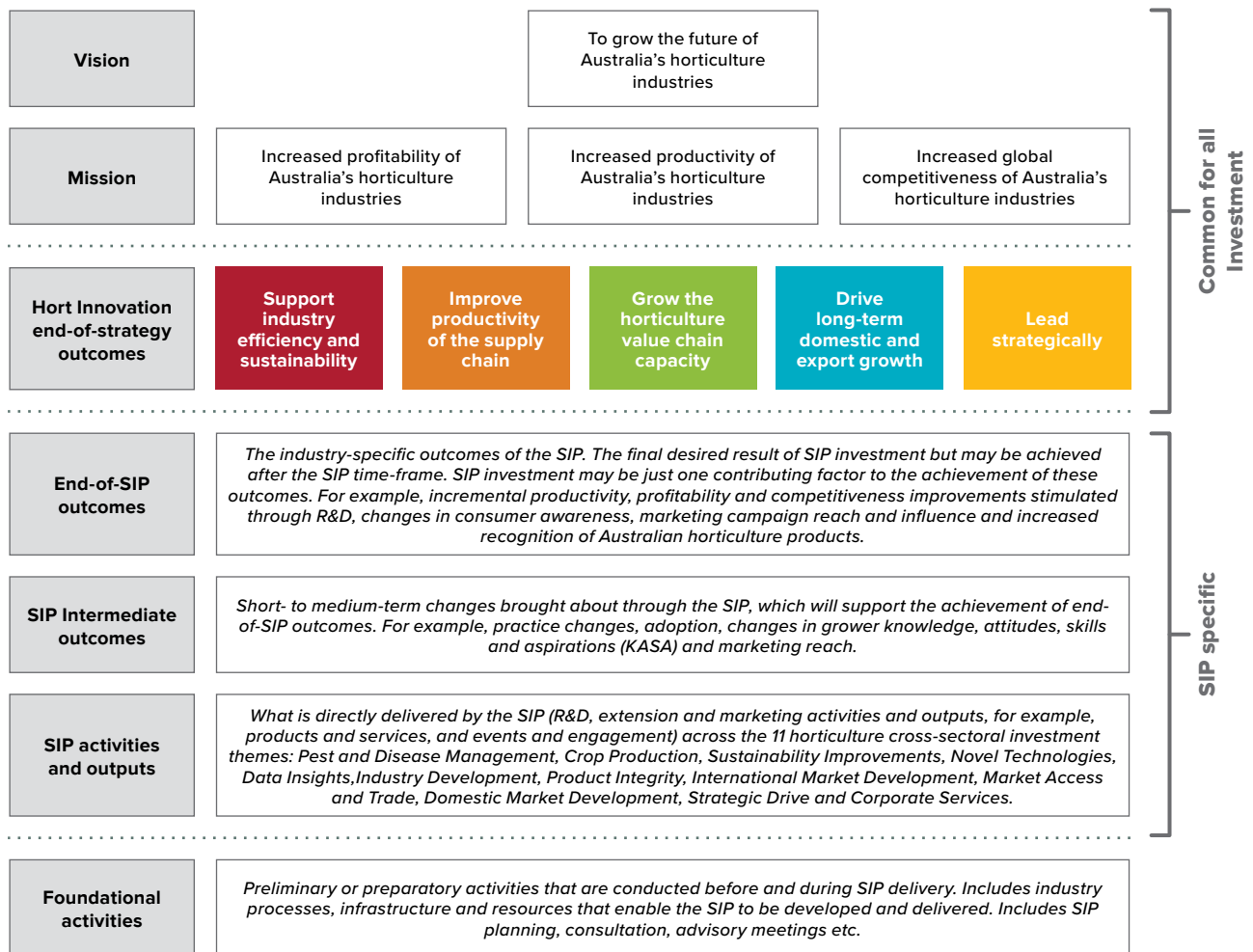
Name	Organisation
Jon Gleeson	Driscolls
Mark Conroy	Driscolls
Jim Ripepi	Australian Strawberry Distributors
Jeff Matthews	YV Fresh
Steve Pasin	YV Fresh
Miffy Gilbert	VSIDC
Luigi Coco	QSGA
Nathan Boronio	Strawberry grower
David Fairweather	Taste 'N See
Merv Schiffke	Taste 'N See
Adrian Schultz	Strawberry grower
Ray Daniels	SAI
Roger Turner	Pinata Farms

A draft version of this SIP was presented to the strawberry SIAP on November 28, 2016. The following people participated in the meeting:

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Luigi Coco
Mark Conroy
Neil Handasyde
Roger Broadley
Malcolm Parker
John Calle



**APPENDIX 2:
Logic hierarchy**



APPENDIX 3: Reference documents

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Nielsen Homescan service for the Strawberry category for the 52 week period ending 11 June for the Australian market. Copyright©2016. The Nielsen Company.

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