Olive

STRATEGIC INVESTMENT PLAN

2017-2021

Hort Innovation
Strategic levy investment

OLIVE 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 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 olive growers.

The olive SIP

Producers in the olive industry pay levies to the Department of Agriculture and Water Resources, 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.

The olive levy is payable on olives 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 olives is $3.10 per tonne.

Hort Innovation manages the olive levy funds directed to R&D ($3 per tonne). Separately, Plant Health Australia (PHA) manages certain plant health programs ($0.10 per tonne). In 2015/16 total olive R&D levy receipts were approximately $332,000.

Hort Innovation has developed this SIP to assist in strategically investing the collected olive levy funds in the priority areas identified and agreed by the 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 olive 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 olive levy payers through a synthesis of various priority-setting exercises, direct consultation, two workshops with Hort Innovation's olive industry SIAP, and widespread industry consultation. The Australian Olive Association (AOA) has also provided substantial input to this plan. The process to develop this plan is fully described in ***Appendix 1***. The people consulted in the preparation of the plan are listed in ***Appendix 2*** and the documents referred to are listed in ***Appendix 4***.

The olive 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 olive SIAP constituency please visit Hort Innovation's website at www.horticulture.com.au.

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STRATEGIC INVESTMENT PLAN 2017-2021 AT A GLANCE

POTENTIAL IMPACT OF THIS PLAN

$25 Million

Based on an estimated investment of $3.07 million over the next five years.

Major opportunities

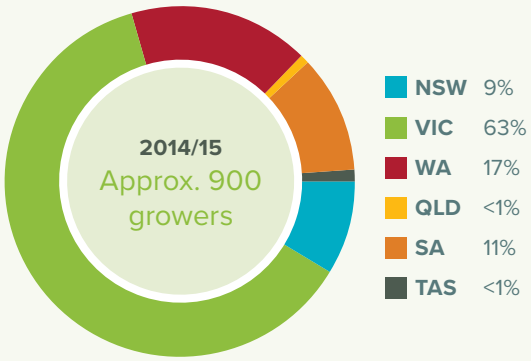
- Improve access to growing Asian markets
- Continue with important market surveillance work
- Increase promotion
- Undertake technology transfer to improve on-farm production
- Adapt quality, flavour
- Actively fit the quality, flavour and presentation of extra virgin olive oil (EVOO) to match evolving and increasing market demand.

Major challenges

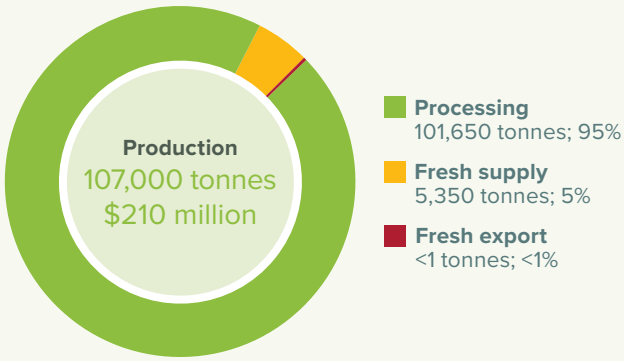
- Lack of regulatory oversight
- Production costs
- Lack of reliable, comprehensive olive statistics.

OUTCOMES	STRATEGIES
Improved on-farm productivity, sustainability and product quality	Promote world-best practice in grove management to increase productivity and quality
	Promote world-best practice in olive oil production, storage and packaging to maintain quality and increase consumer confidence
	Develop an industrywide system to collect and analyse production data (benchmarking)
	Develop and refine integrated pest and disease management (IPDM) strategies
Increased demand for Australian olive products within Australia and in key overseas markets	Commission new or re-examine social and economic market research to support domestic and/or export marketing of Australian olive products
	Commission or support, and disseminate, research that demonstrates the health benefits of Australian olive products
	Ensure key industry marketing messages are backed by science and clearly and widely communicated to industry and pipeline customers
	Investigate options to value-add Australian olive products
Greater skills, capacity and knowledge in the industry	Communicate and extend outcomes of industry R&D

Industry size and production distribution



Olive supply chain and value 2014/15



SECTION ONE

Context

The Australian olive industry

Products

The Australian olive industry produces olives that are used to make oils (predominantly for human consumption, but also for a range of industrial purposes) and table olives.

The Australian Standard for Olive Oils and Olive Pomace Oils AS5264-2011 (the Standard) grades olive oils as 'natural olive oils', 'refined olive oils' or 'olive-pomace oils'.

- 'Natural' olive oils are obtained solely by mechanical or other physical means (milling, pressing and separation) whereby the olive juice is squeezed from the olive fruit. The highest grade of 'natural' oils is 'extra virgin' grade, followed by 'virgin' grade then 'lampante oil', a natural oil that is not fit for human consumption without further processing, where it becomes classified as a 'refined olive oil'
- 'Refined' olive oils are obtained from natural oils by refining methods including deodorisation which do not lead to alterations in the initial glyceridic structure. Refined oil may be blended with natural virgin or extra virgin olive oils. These oils are classified as 'olive oil – composed of refined and virgin (or extra virgin) olive oils' and are fit for human consumption
- 'Olive pomace oils' are obtained by treating olive pomace waste with solvents or other physical treatments. There are three grades of olive pomace oil: 'crude', 'refined olive-pomace oil' and 'olive-pomace oil (composed of refined olive-pomace oils and virgin olive oils)'. In Australia, there is virtually no olive pomace oil produced as the volume of waste is not high enough to warrant the expense of setting up a refining factory.

Edible olive oil is traded globally. The grade of olive oil is determined by numerous factors outlined in the Standard. Olive oil must meet the relevant criteria to be able to claim that it is of that particular grade. The grades are:

- **Extra virgin olive oil** (EVOO)
  - Free fatty acid (FFA) of < 0.8g/100g free oleic acid
  - Peroxide value (PV) of < 20.0 meq/kg oil
  - Organoleptic defects of zero and fresh fruity attributes
  - Other characteristics as defined in the Standard.
- **Virgin olive oil**
  - FFA of <2.0g/100g free oleic acid
  - PV of <20.0 meq/kg oil
  - Organoleptic defects of less than or equal to 2.5, fresh fruity attributes
  - Other characteristics as defined in the Standard.

The other grades – lampante olive oil, refined olive oil, olive oil (composed of refined and virgin olive oil), crude olive-pomace oil, refined olive-pomace oil – also have quality criteria that are outlined in the Standard.

Label descriptions such as 'light', 'lite' or 'extra-light' are not permitted under the Standard.

Extra virgin olive oil is a monounsaturated fat, high in antioxidants and regarded as one of the healthiest edible oils. A major study of the Mediterranean diet concluded that the consumption of EVOO was 'associated with reduced risks of cardiovascular disease and mortality in individuals at high cardiovascular risk'. EVOO is considered to reduce cancer risk, due to either its high monounsaturated fat content or its high levels of phenolic antioxidants.[1]

1 Lipids Health Dis. 2011; 10: 127, http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3199852/

Table 1: Estimated olive and olive oil production in Australia, 2013/14 and 2014/15 *(Source: Australian Olive Association)*

Year	Levy collected	AUD per tonne	Assumed olive production (tonnes)	Assumed oil production (tonnes)*	Assumed oil production (litres)**
2013/14	$245,953	$3.10	79,340	14,281	15,659,147
2014/15	$333,905	$3.10	107,711	19,388	21,258,807
2015/16	$280,000	$3.10	90,323	16,258	17,826,825

** Assumes 18% oil yield ** Assumes 1.096 L/kg oil Data correct as of June 2016.*

Table 2: Estimated olive oil production in Australia by state, 2013/14 to 2015/16 *(Source: Australian Olive Association)*

		VIC	WA	SA	NSW	QLD	TAS
Hectares		8,706	5,690	2,136	3,126	706	168
2013/14	Tonnes	10,175,314	2,242,390	2,126,512	919,192	172,251	23,489
	Per cent of production	64.98%	14.32%	13.58%	5.87%	1.10%	0.15%
	Yield (litres/hectare)	1,169	394	1,115	424	120	127
2014/15	Tonnes	15,306,341	2,125,881	2,380,986	1,339,305	85,035	21,259
	Per cent of production	72.00%	10.00%	11.20%	6.30%	0.40%	0.10%
	Yield (litres/hectare)	1,758	374	1,115	424	120	127
2015/16	Tonnes	12,327,250	1,871,817	1,943,124	1,533,107	128,353	23,175
	Per cent of production	69.15%	10.50%	10.90%	8.60%	0.72%	0.13%
	Yield (litres/hectare)	1,416	329	910	485	182	138

Table olives are harvested either green or black. Table olives undergo one of several fermentation processes using brine or lye (sodium hydroxide) which both preserves the fruit and reduces bitterness. The olives may also be pasteurised. Australian table olives are considered to be comparable or higher quality than those of other countries.[2]

Production – volume, value and yield

The olive industry in Australia comprises approximately 900 growers.[3] Only about 21 of these are considered as operating on a large scale (more than 80 hectares), while a further 64 growers operate between 20 to 79 hectares. The vast majority of growers are considered boutique. The majority of production is from a single large producer in Victoria.[4]

Whilst there is a new wave of people entering the olive industry, there have been notable exits from the industry due mainly to lack of competitiveness.[5]

Reliable data on Australian olive production are not available. However, an estimate of production can be obtained based upon the amount of levy paid (***Table 1***).[6]

Estimates of production by state are shown in ***Table 2***. These figures have been derived from estimates of areas planted and yields per hectare. Victoria is by far the largest producer of olive oil, accounting for around 70 per cent of Australian production in the last two years. Western Australia, South Australia and New South Wales each account for between five and 15 per cent of national production, while Queensland and Tasmania are minor contributors.

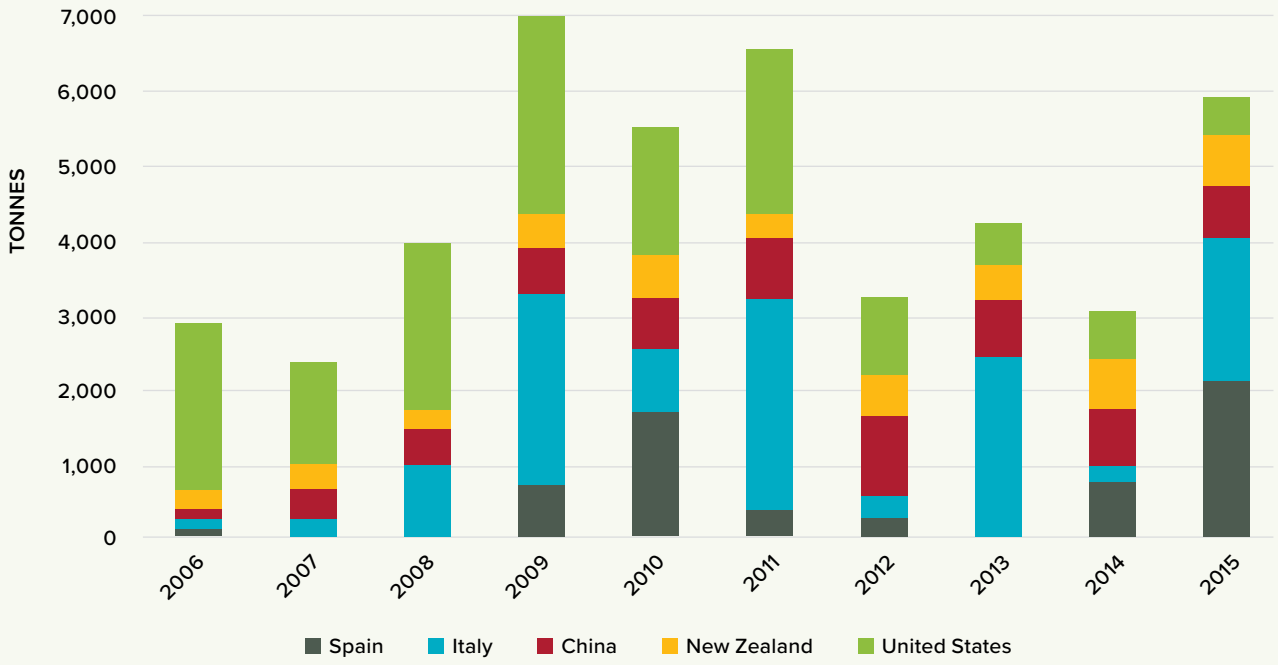
Australian olive production has expanded rapidly over the last two decades. Annual production of olive oil was estimated to be 2,500 tonnes in 2004, compared with 19,388 tonnes in 2014/15 (see ***Table 1***). Much of this growth was driven by Managed Investment Schemes during the period 2004 to 2007.[7] Olives are a biennial bearing[8] fruit which cause tonnages to fluctuate up and down yearly. Most of the biennial bearing issues can be managed/reduced with good orchard management practices.

By way of comparison with Australia's 20,000 tonne production, Spain produces approximately 1.1 million tonnes of olive oil per annum (225,000 tonnes exported), Italy 623,000 tonnes (208,000 tonnes exported) and Greece 261,000 tonnes (10,000 tonnes exported). Total world production is approximately 3 million tonnes.[9]

2 Smyth 2012
3 Australian Olive Association, pers comm
4 Australian Olive Association, pers comm
5 Australian Olive Association, pers comm
6 Olive production data have not been collected by the Australian Bureau of Statistics since 2012/13. The data reported here have been estimated by the AOA using levy collection data and assumptions about yields and other parameters
7 Freshlogic 2014
8 'Biennial bearing' refers to the tendency of some fruit crops, including olives, to produce unequal crops – an 'on' year of heavy yield is followed by an 'off' year of much lower yield
9 International Olive Council 2016

Figure 1: Export destinations for Australian olive products over the last ten calendar years

(Source: Fresh Intelligence Consulting 2016 using Global Trade Atlas data)



Current olive oil yields across the Australian industry are estimated to be approximately 600 litres per hectare (L/ha). The International Olive Council has published benchmark average yields among its member countries of around 900 L/ha, although this includes production systems ranging from 'traditional rain-fed on steep slopes' (400 L/ha average) through to 'super intensive irrigated' systems (1,730 L/ha average).[10] Experts believe that the benchmark for long-term viability from commercial, irrigated groves in Australia is 2,000 L/ha. Australian costs are $5,000 to $6,000 per hectare. Maximising yield depends on choice of variety, appropriate management and environment in approximately equal proportions.[11]

Exports

Australian exports of olive products over the last ten years are shown in ***Figure 1***.

Between April 2015 and March 2016, the latest figures available for this plan, Australia exported 6,686 tonnes of olive products, worth a total of $38.03 million. The average recorded free-on-board (FOB) export value was $5.69 per kilogram. Olive oil accounted for 97 per cent of the exports of Australian olive products.

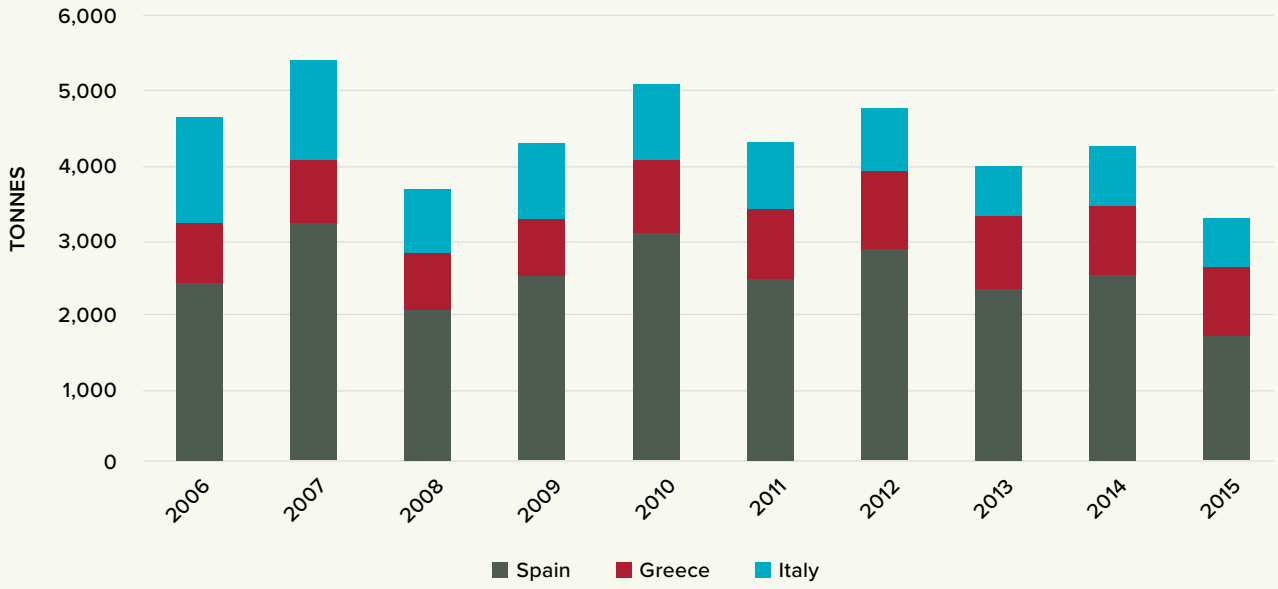
The five major destination markets for Australian olive products over the last decade have been Spain, Italy, China, New Zealand and the United States. The volumes exported to each of these markets has fluctuated significantly over the period (***Figure 1***).

Victoria was the leading export state, accounting for 74 per cent of export volume. Olive exports from Western Australia lifted from 30 tonnes in July to March 2015 to 565 tonnes in July to March 2016. Western Australia now accounts for 11 per cent of national exports by volume.

The five major destination markets for Australian olive products over the last decade have been Spain, Italy, China, New Zealand and the United States.

10 IOC 2015
11 L. Ravetti, pers comm

Figure 2: Imports of olive products into Australia from the three main source countries over the last ten calendar years
(Source: Fresh Intelligence Consulting 2016 using Global Trade Atlas data)



Imports

Australian imports of olive products over the last ten years are shown in ***Figure 2***. Olive products are imported from three main countries – Spain, Italy and Greece. Approximately 58 per cent of olive product imports by tonnage are in the form of oil, while 42 per cent is fresh and preserved olives.[12]

Imports of olive oil over the last five years are shown in ***Table 3***.

Table 3: Volume of olive oil imports into Australia 2010/11 to 2014/15 *(Source: ABARES)*

Year	2010/11	2011/12	2012/13	2013/14	2014/15
Imports (tonnes)	35,411	30,619	30,286	27,975	25,786

In 2014/15 Australian growers produced just under half of the olive oil consumed in Australia. Australia is now importing 22 per cent less olive oil compared to 2003/04.[13]

Table olives

Australia produces approximately 4,500 tonnes of table olives, from around 125 producers with a total grove area of 900 hectares. Only four producers are known to have a production area of greater than 40 hectares, the largest having 125,000 trees producing 1,000 tonnes annually. The majority of table olive producers operate less than five hectares and supply the tourist market and small retailers. Australians consume around 17,000 tonnes (0.7 kilograms per person) of table olives but at least 75 per cent of these are imported.[14]

There is high demand for Australian table olives and they attract higher prices per kilogram than oil. However, the high cost of casual labour needed to pick table olives in Australia discourages many growers from producing table olives despite the better prices. There are some mechanical table olive pickers but these are generally used by large table olive producers and are not available to smaller producers.

In 2014/15, table olive exports were estimated to be 148 tonnes (an increase of 12 per cent on the previous year) with a total value of $0.94 million. Major export destinations for Australian table olives are shown in ***Table 4***.[15]

12 Fresh Intelligence Consulting 2016
13 Australian Olive Association pers comm
14 McFarlane 2016
15 McFarlane 2016

Figure 3: Value share of olive oil in the cooking oil category in supermarkets, Australia, March 2014 to March 2016
(Source: Boundary Bend)

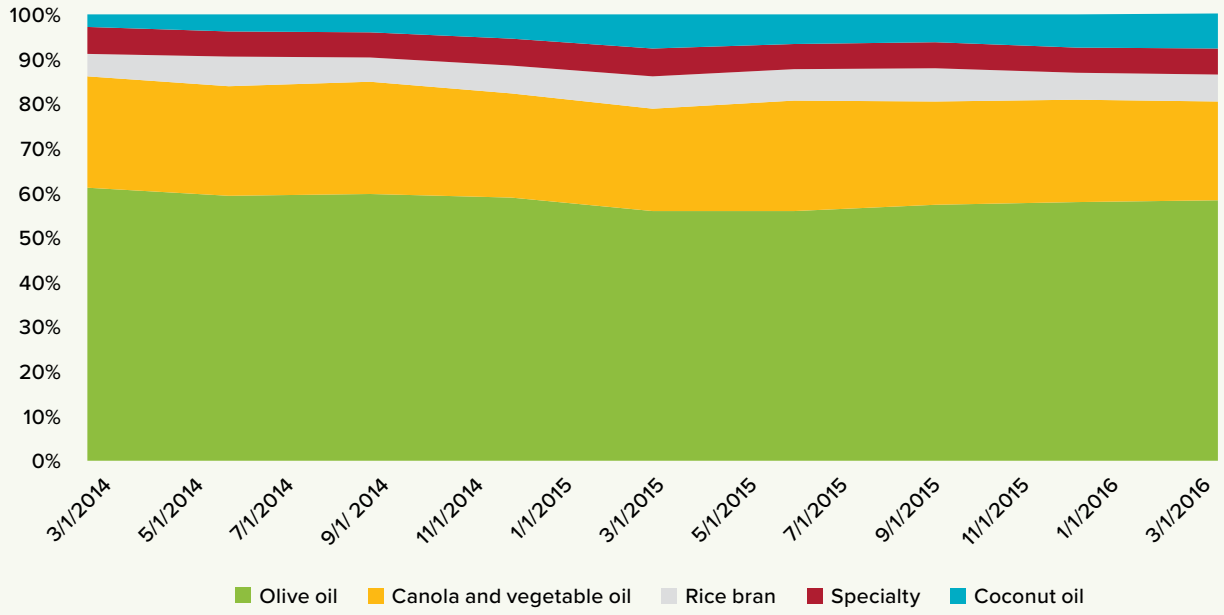


Table 4: Export destinations for Australian table olives
(Source: McFarlane 2016)

Destination market	Proportion of exports by volume	Average price per kilogram received
New Zealand	50%	$5.59
Spain	18%	$1.72
United Arab Emirates	11%	$13.95
Greece	8%	$5.10
Japan	3%	$6.67
Hong Kong	2%	$8.09
Singapore	2%	$11.26

Table olive imports to Australia in 2014/15 were 12,958 tonnes with a total value of $41.3 million. Major countries of origin were Spain (43 per cent), and Greece (37 per cent).[16]

Demand

Australian consumption of olive oil increased from around 1.2 to 1.8 litres per head between 1996 and 2015.[17] If the current figure is calculated using only the 15 to 67 age group, current consumption is closer to 2.2 litres per head.

Olive oil is the dominant cooking oil in Australia by value, accounting for approximately 58 per cent of supermarket sales (***Figure 3***). It is exceeded in volume sales only by canola and vegetable oil (40 per cent vs 45 per cent) (***Figure 4***). Coconut oil has been a major mover in the category over the last two years, growing from a 2.8 per cent share of value in the quarter to March 2014 to 7.9 per cent in the quarter to March 2016. Rice bran oil has also grown strongly in volume but much less in value. Olive oil has lost four to five per cent of volume share over the period (***Figure 3*** – value share, ***Figure 4*** – volume share) with value share fairly stable.

Olive oil is the dominant cooking oil in Australia by value, accounting for approximately 58 per cent of supermarket sales.

16 McFarlane 2016
17 T. Smith, pers comm

Figure 4: Volume share of olive oil in the cooking oil category in supermarkets, Australia, March 2014 to March 2016
(Source: Boundary Bend)

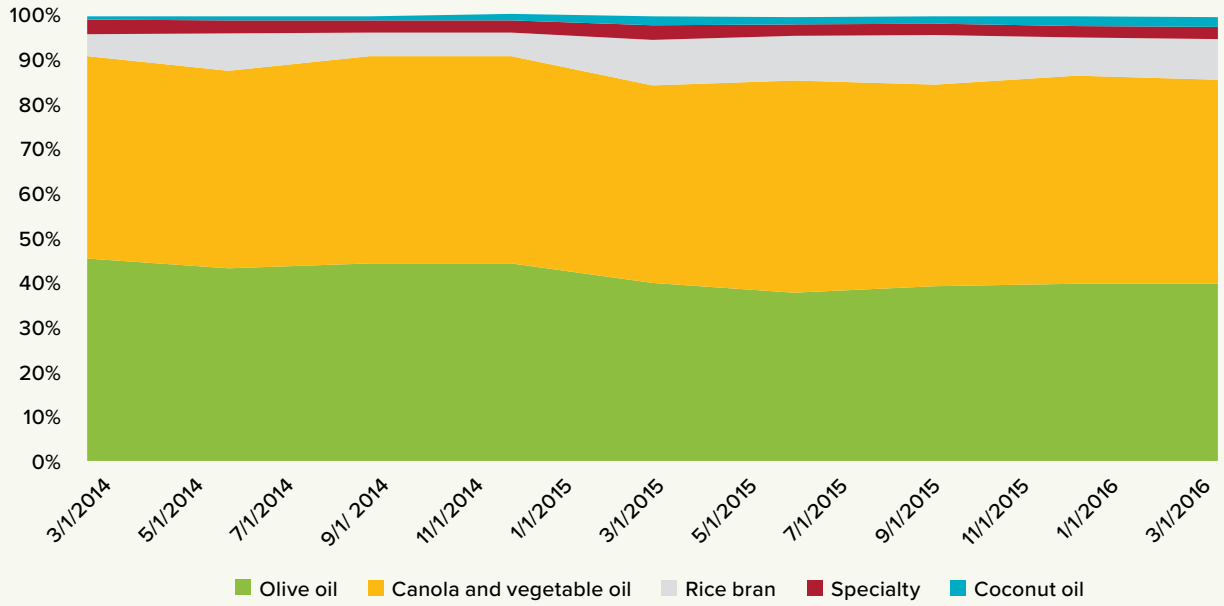
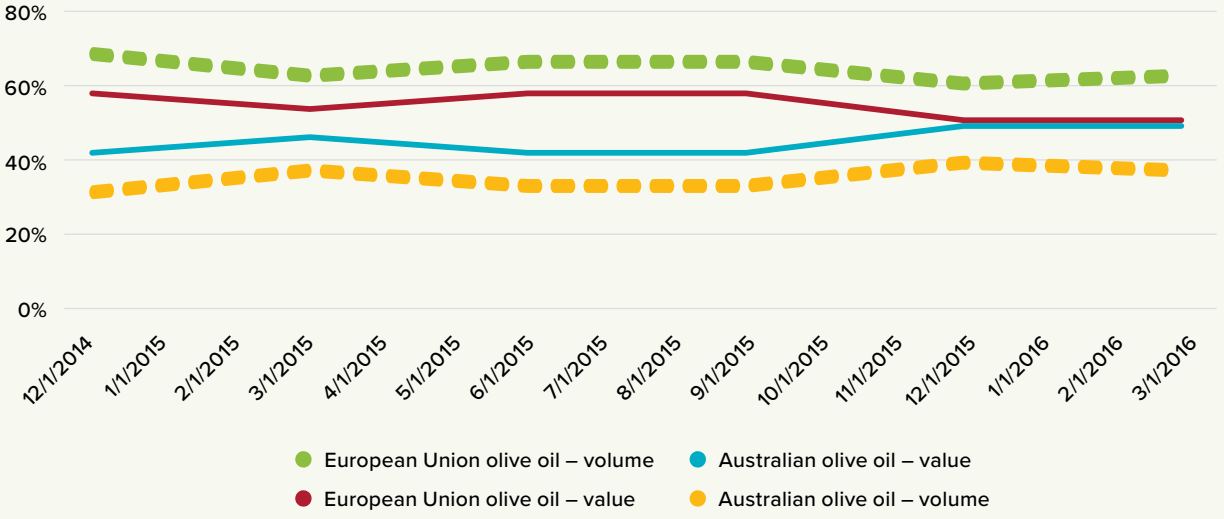


Figure 5: Value and volume share of Australian olive oil market by origin of product in supermarkets, September 2014 to March 2016. *(Source: Boundary Bend)*



Australian olive oil accounts for almost half of the olive oil sold in Australia by value, and approximately 38 per cent by volume (***Figure 5***). Both value and volume have been on a slightly rising trend over the last two years. Australian olive oil achieves an average retail price of $11.61 per litre against $7.91 per litre for olive oil of European Union origin, a 47 per cent premium. This is largely accounted for by a higher proportion of the European Union product than the Australian product being sold in tins, which are typically in larger units and sold at a discount to bottles.

The EVOO share of Australian supermarket sales has increased in both value and volume (***Figures 6 and 7***) terms over the last two years due to a decline in Extra Light and Pure tin sales. EVOO now accounts for around 69 per cent of sales by value.

Figure 6: Value share of Australian olive oil in supermarkets by grade of oil, March 2014 to March 2016 *(Source: Boundary Bend)*

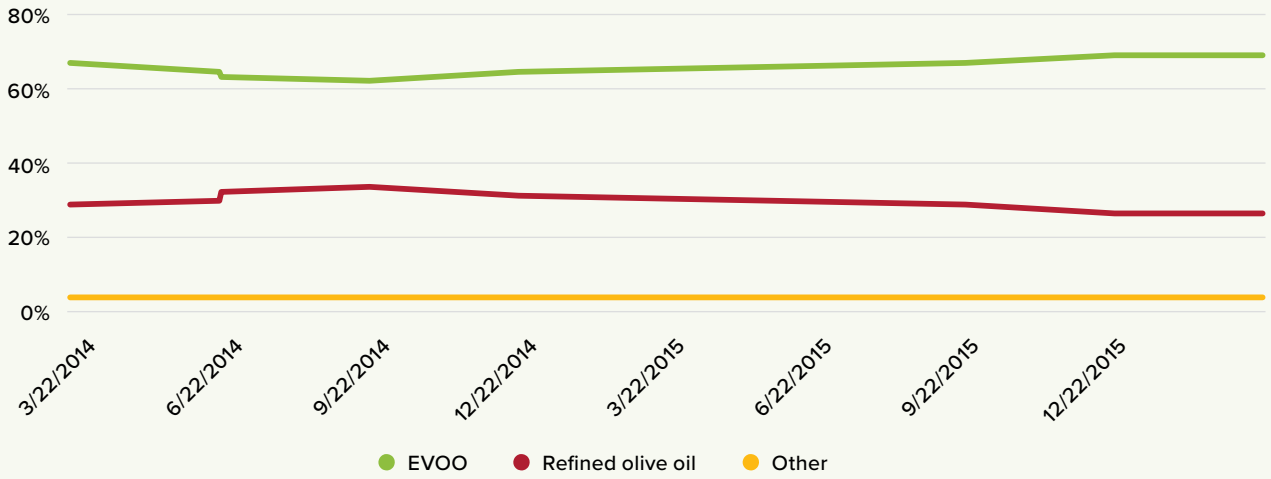
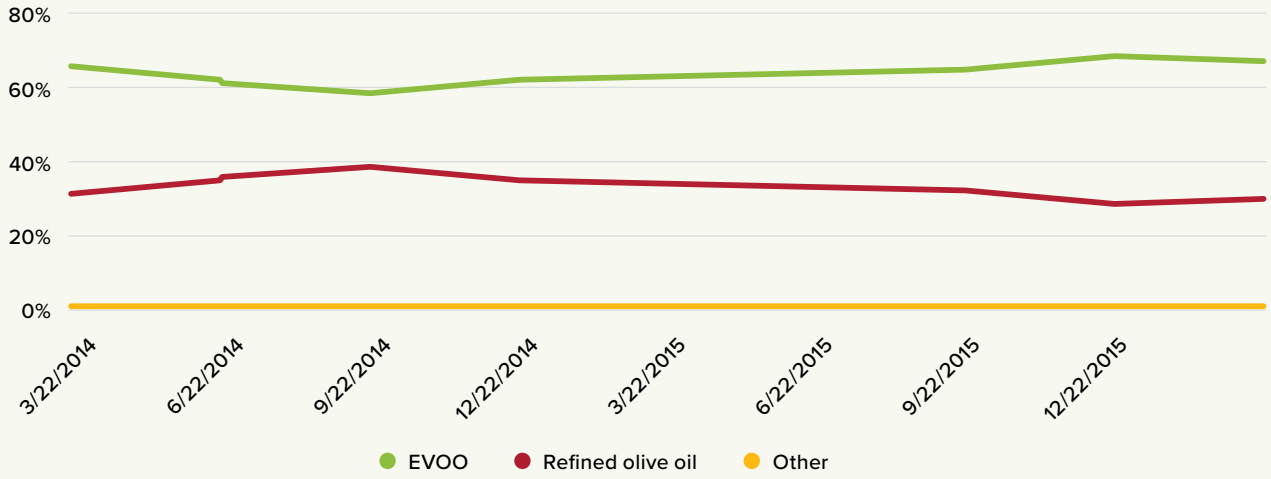


Figure 7: Volume share of Australian olive oil in supermarkets by grade of oil, March 2014 to March 2016
(Source: Boundary Bend)



Operating environment

An analysis of the industry's strengths, weaknesses, opportunities and threats (SWOT) was undertaken by the SIAP.

The olive industry	
Strengths	• Australia's reputation as a **trustworthy, innovative, and efficient** agricultural product producer • Effective and ongoing market surveillance of imported and domestic olive product quality and labelling • Ability to produce consistently **high quality products** with scientifically proven health benefits • Established and growing **domestic market** for EVOO and table olives • Established and growing **high-margin export market opportunities** in China and Asia for high quality EVOO • Having the **largest producer** of olive oil in Australia being **quality-driven** and supportive of the peak industry body and its industry programs.
Weaknesses	• Lack of **regulatory oversight** which continues to enable mislabelling of inferior grades of olive oil. This has created uneven competition in domestic markets which devalues Australian extra virgin olive oil and the overall reputation of olive oil as a healthy food • Australian production costs vary and growers do not enjoy the **subsidies** available to European Union producers. Competing head to head with these imported products puts Australian producers at a disadvantage • Insufficient and/or ineffective **technology transfer** of previous R&D outcomes to growers, partly due a high rate of turnover in industry participants • Lack of reliable, comprehensive olive **statistics** – industry participant numbers, production and sales • Growers unaware of **production targets** they should be aiming for, resulting in a high proportion of Australian growers being unprofitable due to low yields per hectare.
Opportunities	• **Australian Standard** for Olive Oils and Olive Pomace Oils AS5264-2011 to establish and support truth in labelling • Continue with important **market surveillance** work • **Increase promotion** of the health benefits and culinary uses of Australian EVOO • Provide education to the **food service industry** about the importance of 'fresh' Australian EVOO and its culinary attributes • Improve access to growing **Asian markets** by supporting export initiatives • **Undertake technology transfer** to improve on-farm production by using existing knowledge that is effectively communicated and applied • Actively fit the quality, flavour and presentation of EVOO to **match evolving and increasing market demand** and fight competition from other food oils.
Threats	• Pests and diseases spreading from **abandoned groves** and/or failure of **biosecurity** measures leading to entry of serious pests and diseases into Australia • **Climate change** creating risks to production from both variable weather conditions and changes in pest and disease incidence • Loss of domestic market share to **alternative food oils** as a result of failure to convince consumers of the value proposition of olive oil • Australia's **food service industry** is plagued with mislabelled oils and general lack of information, appreciation and/or understanding about EVOO and its effect on food. This is a threat to the industry but is also an opportunity • Lack of effective and **affordable harvesting** solutions for small/medium growers • Increased **reliance on imported oils** due to lack of production in Australia caused by yield targets not being met • Strong **competitive reaction**, by (especially) European oil producers and their Governments to both domestic and Asian export marketing initiatives by Australian producers.

2

SECTION TWO

Olive industry outcomes

Industry outcomes

A key aspiration of the olive industry is to develop a vibrant and sustainable olive industry in Australia. The main objective of this SIP is to identify and deliver innovative and effective R&D solutions to educate, inform and empower growers to manage issues, improve on-farm capability and maximise opportunities so olive growers can build profitable and sustainable businesses.

OUTCOME 1

Improved on-farm productivity, sustainability and product quality

Like any industry, the olive industry must continually innovate to remain competitive to reduce costs of production, improve product quality and ensure the industry is sustainable. This includes addressing the risks and issues associated with climate change. Industry-funded R&D and extension is an important means to achieving these ends.

The industry is characterised by a small number of very large producers and a large number of small producers. Both groups have R&D and extension priorities in common but there are also some important differences, for example, requirements for technical extension and mechanisation of key segments of the industry such as grove management and harvesting, and both must be accommodated by the R&D and extension portfolio.

For the olive industry, there is a particular imperative to assist growers to address low yields, which contribute to poor profitability. An important starting point is to quantify what yields are achievable under different production systems and environments in Australia. Benchmarking data can then become the basis for practice improvement by individual growers.

It is also vital that all producers have a total focus on quality, from growing, through processing, packaging and storage, as the currently strong reputation of the entire industry could be severely damaged by poor quality management by just a small number of producers.

Outcome 1 is closely linked to Outcome 3, which focuses on the building of skills and capacity in industry participants.

Like any industry, the olive industry must continually innovate to remain competitive...

OUTCOME 2

Increased demand for Australian olive products within Australia and in key overseas markets

Australian olive products are of high quality by global standards. Promoting and defending this quality advantage in domestic and export markets is critical to maintaining a point of difference and attracting a premium price. This will involve ongoing market surveillance of both imported and local olive products, understanding how consumers make decisions in respect to olive products and ongoing education of growers in how to maintain high quality standards.

A specific area of focus for investment is the excellent health story that olive products, and particularly EVOO, have to tell. This story must be built upon sound science and used to greatest advantage in the marketplace.

Depending on what specific opportunities arise, investments under this outcome may also seek to develop ways to value-add Australian olive products.

OUTCOME 3

Greater skills, capacity and knowledge in the industry

Whilst investments under Outcome 1 are important to deliver innovative technologies and practices to the industry, there is an even greater need to build the skills of industry participants. Knowledgeable and capable growers will be more profitable and are less likely to pose risks to the rest of the industry through poor quality management or the abandonment of groves leading to biosecurity threats.

Technology transfer has not been successfully delivered to the olive industry in the past. The industry is geographically dispersed, which presents a challenge. However, new delivery technologies, successful models in other industries and the extension value of benchmarking data (Outcome 1) provide opportunities to deliver an effective capacity building program.

The olive industry R&D levy is only eligible for expenditure on activities that qualify as research and development activities under Hort Innovation's Deed of Agreement with the Australian Government.

3

SECTION THREE

Olive industry priorities

Industry investment priorities

The following industry investment priorities or strategies have been developed to deliver against the three target outcomes.

'High' (H) or 'Medium' (M) priority deliverables have been identified under each strategy. The available budget will allow only a limited number of these deliverables to be pursued and these will preferentially be the high-priority ones, at least in the initial two to three years of the life of the SIP. Medium-priority deliverables are more likely to be supported where projects can be identified that offer highly favourable risk/reward profiles.

OUTCOME 1 – Improved on-farm productivity, sustainability and product quality	
STRATEGIES	**POSSIBLE DELIVERABLES**
1.1 Promote world-best practice in grove management to increase productivity and quality	• More cost-effective and innovative harvesting and processing solutions (H) • Industry extension program (H) • Solutions to sustainable waste stream management (M) • Alternative processing techniques to enhance the health properties of table olives. (M)
1.2 Promote world-best practice in olive oil production, storage and packaging to maintain quality and increase consumer confidence	• New technical data, where required, to underpin the Australian Standard for olive oil (H) • Monitoring data on product quality in the market place (M) • Active encouragement of brand owners of imported olive oils to comply with the Australian Standard for olive oil (M) • New and innovative olive oil packaging for export that is easy to transport, easy to fill and can be marketed as 'phthalate-free' (M) • A review of existing R&D on best-practice storage conditions for olive oil and develop simple, consistent and timely messaging to remind growers how best to store their EVOO. Messaging should also be developed for retailers and food-service industry on how to store/present EVOO to ensure it has the best chance of reaching its best-before-date. (M)
1.3 Develop an industry-wide system to collect and analyse production data (benchmarking)	• Survey of top olive producers of various sizes in various regions on key production elements to derive data for use in benchmarking exercises (M) • Case studies based on the survey (M) • Value-chain mapping of the Australian olive industry (M) • Benchmarking of the Australian industry against those of other countries that produce olives in a similar way, taking advantage of extensive R&D work done overseas. (M)

OUTCOME 1 – Improved on-farm productivity, sustainability and product quality	
STRATEGIES	**POSSIBLE DELIVERABLES**
1.4 Develop and refine pest and disease control strategies (IPM)	• Continued access to chemicals used in olive production (H) • Representation of industry at all forums that discuss pest and disease threats to Australia's biosecurity (H) • Integrated pest management approaches for all growers, including organic options, developed and promoted (M) • Technical materials that help growers to understand the life-cycle of olive pests and diseases and importance of understanding 'timing' to effectively manage pest and diseases (M) • Research data to fill any gaps identified by industry. (M)

OUTCOME 2 – Increased demand for Australian olive products within Australia and in key overseas markets	
STRATEGIES	**POSSIBLE DELIVERABLES**
2.1 Commission new or re-examine social and economic market research to support domestic and/or export marketing of Australian olive products	• Updated research data on consumer decision-making behaviour with respect to edible oils as required (M) • Research data on attributes of competitor oils and what would drive a consumer to switch type/brand (M) • Research data on packaging, sizes and types that appeal to certain export markets. (M)
2.2 Commission or support, and disseminate, research that demonstrates the health benefits of Australian olive products	• 'Value proposition' for certified Australian olive products based on science (M) • Compilation of research on health benefits of olive products with a specific focus on the Australian (rather than Mediterranean) population (M) • A comprehensive library of health-related information on olive products that is easily accessed and fully referenced (M) • Market research of health professionals to develop a profile of health perceptions of EVOO. (M)
2.3 Ensure key industry marketing messages are backed by science and clearly and widely communicated to industry and pipeline customers	• Education of customers, especially chefs and the food-service industry, about the health benefits of olive oil and how to cook with Australian EVOO (H) • Technical data needed to underpin point-of-sale (POS) and other materials on the health benefits of Australian olive products. (M)
2.4 Investigate options to value-add Australian olive products	• Scoping study to identify greatest opportunities for derivative olive oil products which should include options for the beauty and other industries, for lower-grade olive oils, and for other health products. (M)

3 – Greater skills, capacity and knowledge in the industry	
STRATEGIES	**POSSIBLE DELIVERABLES**
3.1 Communicate and extend outcomes of industry R&D (H)	• An extension/adoption strategy for the industry, potentially including: » Revamping the Olive Growing book and converting it to an electronic format that is easier to search and disseminate » Developing a continuing professional development (CPD) program to be undertaken by growers as a requirement of the Code of Practice » Developing extension packages and delivery models appropriate to the industry, including pest and disease management fact sheets and 'electronic reminders'. (H)

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 8***. ***Figure 8*** also shows how each cross-sectoral investment theme relates to the five investment priorities.

Figure 8: Hort Innovation's investment priorities

The alignment of olive 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 5***.

Table 5: Alignment of olive SIP outcomes to the Hort Innovation investment priorities

Hort Innovation investment priorities	Olive SIP outcomes
Support Industry efficiency and sustainability	Improved on-farm productivity, sustainability and product quality
Improve productivity of the supply chain	
Grow the horticulture value chain capacity	Greater skills, capacity and knowledge in the industry
Drive long-term domestic and export growth	Increased demand for Australian olive products within Australia and in key overseas markets
Lead strategically to enhance the development of the Australian horticulture industry through operational excellence	Enabler

4

SECTION FOUR

Olive industry monitoring and evaluation

Olive SIP monitoring, evaluation and reporting

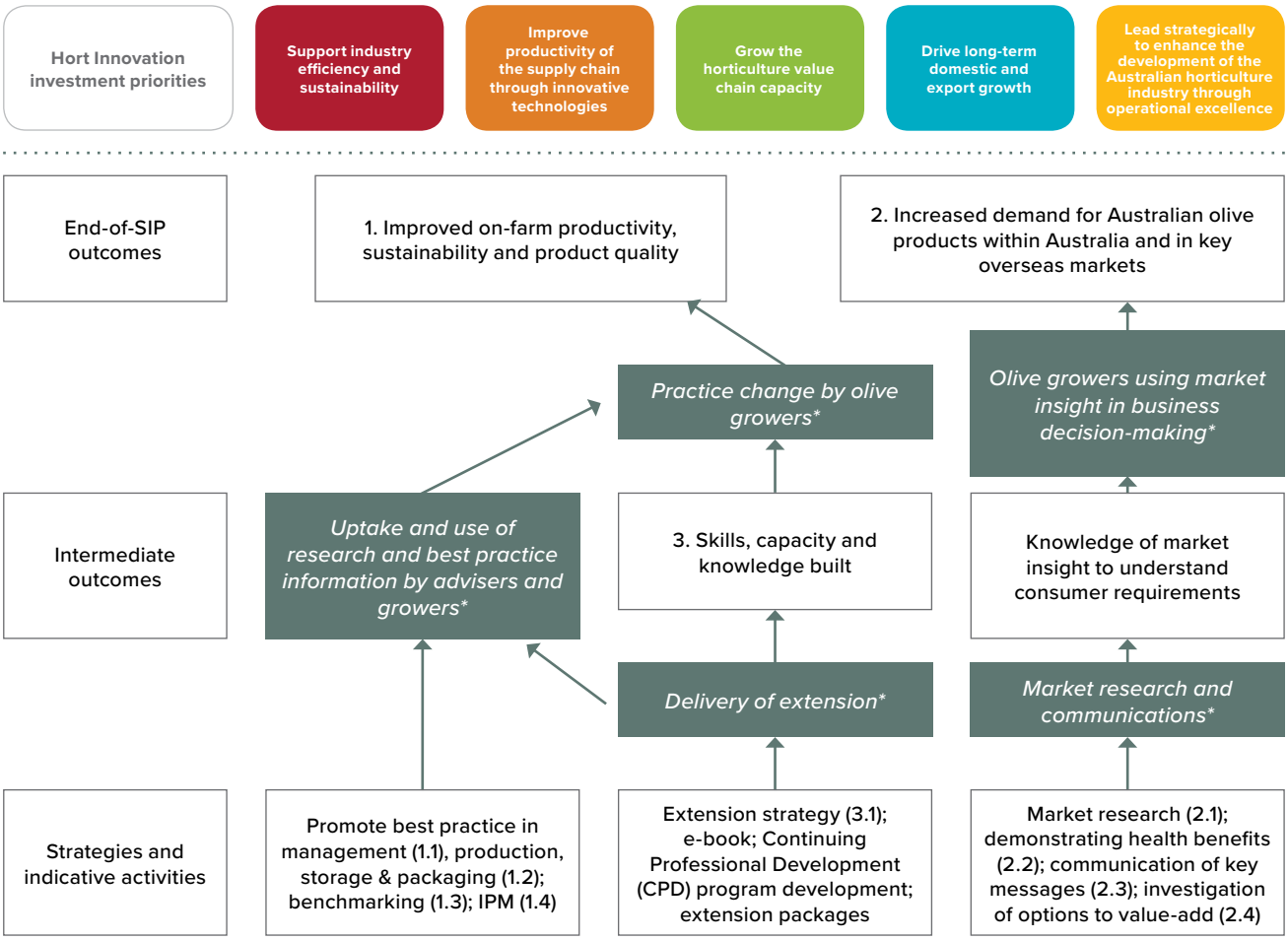
A SIP program logic and monitoring and evaluation (M&E) plan has been developed for the Olive SIP. These are informed by the Hort Innovation Organisational Evaluation Framework. The logic maps a series of expected consequences of SIP investment. The M&E shows the performance measures that will be measured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

Olive SIP logic

An indicative Olive SIP program logic is shown on page 19 in ***Figure 9***. The logic is based on the Hort Innovation SIP logic hierarchy (***Appendix 3***).

Figure 9: Olive SIP logic



*The shaded boxes are not explicitly identified in the Olive SIP.

Olive SIP M&E plan

The olive M&E plan is shown in ***Table 6***. 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 6: Monitoring and evaluation plan for the olive SIP

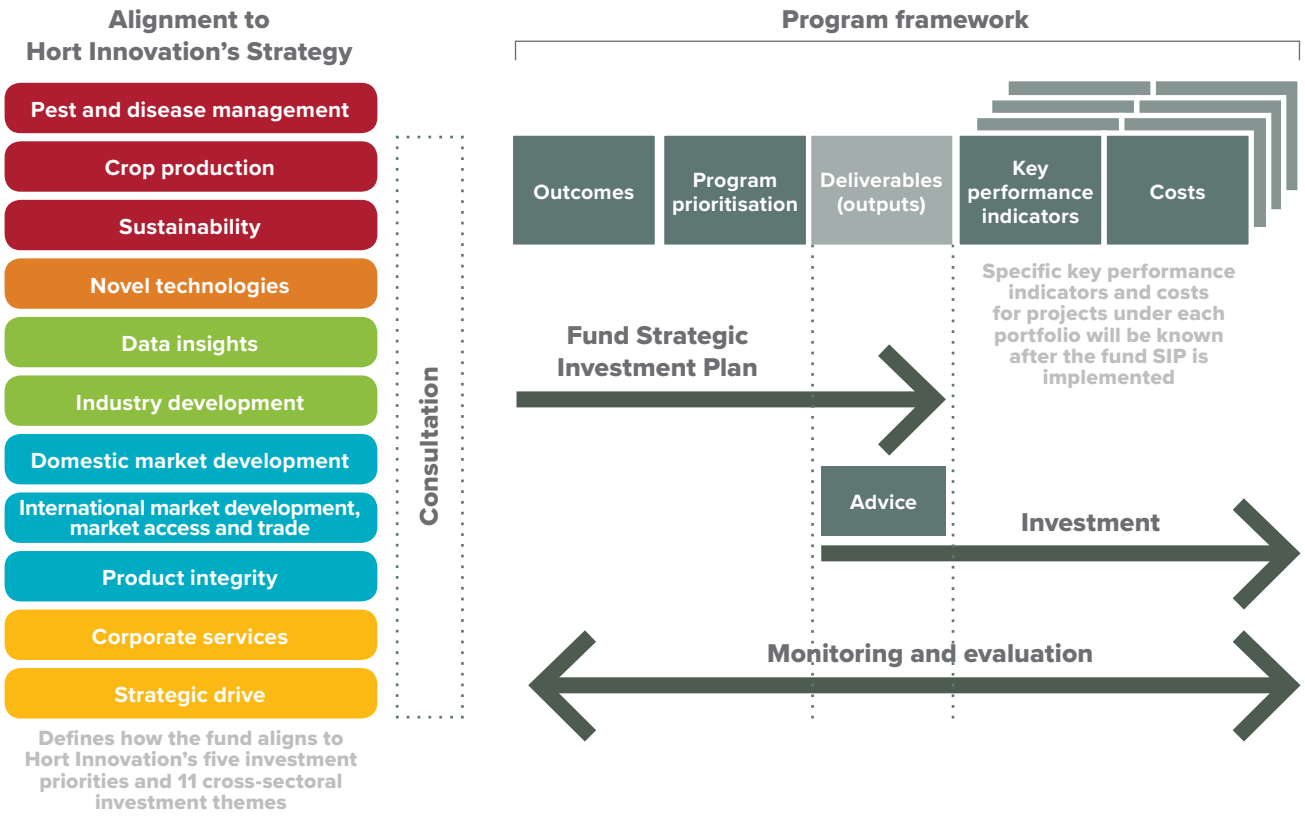
Outcome	Strategies	KPIs	Data collection methods and sources
OUTCOME 1: Improved on-farm productivity, sustainability and product quality	1.1 Promote world-best practice in grove management to increase productivity and quality 1.2 Promote world-best practice in olive oil production, storage and packaging to maintain quality and increase consumer confidence 1.3 Develop an industry-wide system to collect and analyse production data (benchmarking) 1.4 Develop and refine pest and disease control strategies (IPM)	• Increase average industry oil yield. Baseline and growth targets to be determined through initial benchmarking study (see Strategy 1.3), with differentiation between different production systems: » Small: less than 20 hectare irrigated » Small: less than 20 hectare non-irrigated » Medium: 21 to 79 hectare irrigated » Medium: 21 to 79 hectare non-irrigated » Large: more than 80 hectare irrigated » Large: more than 80 hectare non-irrigated • Number of/per cent of practice changes (uptake and adoption) farms/producers (by industry)alignment of olive SIP outcomes to the Hort Innovation investment priorities • Degree of influence of research uptake by growers (by industry segment)	• Benchmarking study to be commissioned • AOA 'Health of the industry' survey • Grower survey or interviews to assess practice change
OUTCOME 2: Increased demand for Australian olive products within Australia and in key overseas markets	2.1 Commission new or re-examine social and economic market research to support domestic and/or export marketing of Australian olive products 2.2 Commission or support, and disseminate, research that demonstrates the health benefits of Australian olive products 2.3 Ensure key industry marketing messages are backed by science and clearly communicated to industry 2.4 Investigate options to value-add Australian olive products	As per the SIP logic, there is an assumption that R&D and extension projects funded under the SIP will assist promotional or other activities undertaken outside the SIP to deliver the following KPIs: • Maintain or increase Australian consumption of olive oil of 2.1 litre per capita • Increase the value share of Australian olive oil in all olive oil sales of 48 per cent • Maintain or increase the value share of olive oil in all edible oil sales of 58 per cent • Increase awareness amongst consumers of the industry's triangle certification trade mark and its integrity, from a baseline to be determined • Market insights reach within industry	• Retail data • Consumer survey to be commissioned • Grower survey to assess use of market insights by growers to determine changes in knowledge of market opportunities and trends, health benefits and value add opportunities
OUTCOME 3: Greater skills, capacity and knowledge in the industry	3.1 Communicate and extend outcomes of industry R&D	• Increase confidence and skills of growers to increase yields, better manage pest and diseases and other problems and extract more olive oil • Increase attendance at workshops, conferences and training programs	• Event attendance counts and exit evaluations • AOA 'Health of the industry' survey • Grower survey or interviews to assess practice change

Reporting

The program framework in ***Figure 10*** 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 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 10: Hort Innovation's program framework



SECTION FIVE

Impact assessment

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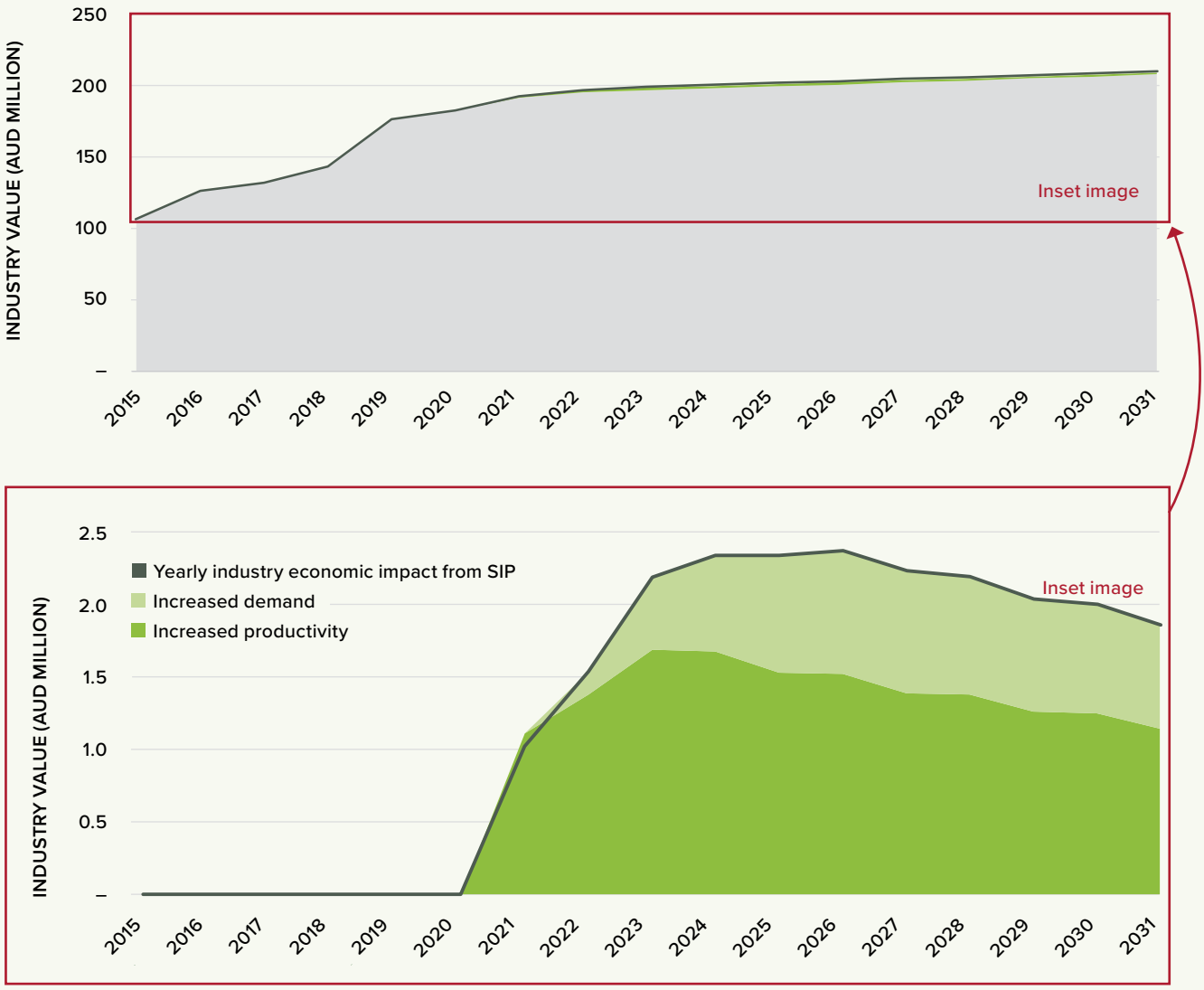
Figure 11: Economic benefit from investment in the SIP



An independent assessment of the potential economic impacts from investment into the olive SIP indicated a positive return on investment for the industry (***Figure 11***). The anticipated investment of $3.07 million over the next five years in R&D and extension activities is expected to generate $25.06 million in net benefits for the industry, representing a benefit cost ratio (BCR) of 8.16 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 7 provides a summary of the SIP outcomes, the anticipated deliverables, the net economic benefits, and the associated BCR.

Table 7: Summary of assessed impacts for each SIP outcome

Outcome	Expected deliverables	Anticipated SIP investment (over five years)	Net benefits (over 15 years)	Benefit Cost Ratio (BCR)
OUTCOME 1: Improved on-farm productivity, sustainability and product quality	• Best practice management (pre and post-harvest) to support increased yield and quality.	$1,939,694	$17,448,768	9.00
OUTCOME 2: Increased demand for Australian olive products within Australia and in key overseas markets	• Educate consumers about the health benefits of EVOO supported by technical data; market research; and research into value adding for derivative oil products.	$1,132,983	$7,616,017	6.72
OUTCOME 3: Greater skills, capacity and knowledge in the industry	• An extension and adoption strategy for the industry	Incorporated in above outcomes	Incorporated in above outcomes	Incorporated in above outcomes
	All impacts	**$3,072,677**	**$25,064,785**	**8.16**

The quantified impacts associated with Outcome 1:

- Extension of existing and new best practice management techniques, with a focus on low to medium yielding growers who make up the majority of planted area, thereby supporting increased average yield for the industry
- As the outcome includes the extension of existing best management practices, outputs are estimated to be delivered in the short term, supporting early adoption from year two of the SIP (2017/18) and diffusion throughout industry over a 5-year period
- Cost of adoption, including fixed and variable costs, is estimated to be approximately 50% above baseline management costs[18]
- Estimated adoption impact from existing and new best practice management research is estimated to be 75% above current yields[19]
- New production is valued at the farmgate price, which has a baseline value of $6.2/L in 2016/17,[20] and is projected forward based on an indexation of world olive oil prices
- The economic impact is highly sensitive to the level of total adoption and the rate of diffusion throughout the industry.

The quantified impacts associated with Outcome 2 include:

- Consumer education, supported by technical data and product development, to increase demand in the domestic and premium export markets, providing price support at the farmgate
- Product development, market development and consumer behavioural change are assessed to have longer impact pathways. Outputs are estimated to be delivered in the short to medium term, supporting adoption from year three of the SIP (2018/19) and diffusion throughout industry and consumers (domestic and export) over an 8-year period
- A potential price benefit is derived from historic premium of Australian olive oil above the world olive price. By strengthening demand, the project supports an increased premium from the current 2 year average price premium of +14%, back to the 10 year average premium of +31%[21]
- The economic impact is highly sensitive to external factors including world production and prices, exchange rates, and economic behaviour (influencing income and expenditure behaviour).

Outcome 3 was assessed to have no direct impacts; however, the extension activities are critical to achieving the adoption levels and economic impacts identified with Outcomes 1 and 2. As such, Outcome 3 impacts are indirectly realised through the other outcomes.

While other economic, social and environmental impacts are likely to result from SIP investments, a detailed assessment is not possible due to their unquantifiable nature, or due to current industry data limitations. However, the above assessment provides a baseline for future, more detailed investment analysis as new data becomes available.

18 Derived from industry consultation.
19 Derived from industry consultation.
20 Derived from industry consultation.
21 Index Mundi, commodity price index, extra virgin olive oil; and Global Trade Atlas, Australian exports of HS0509 and HS0510

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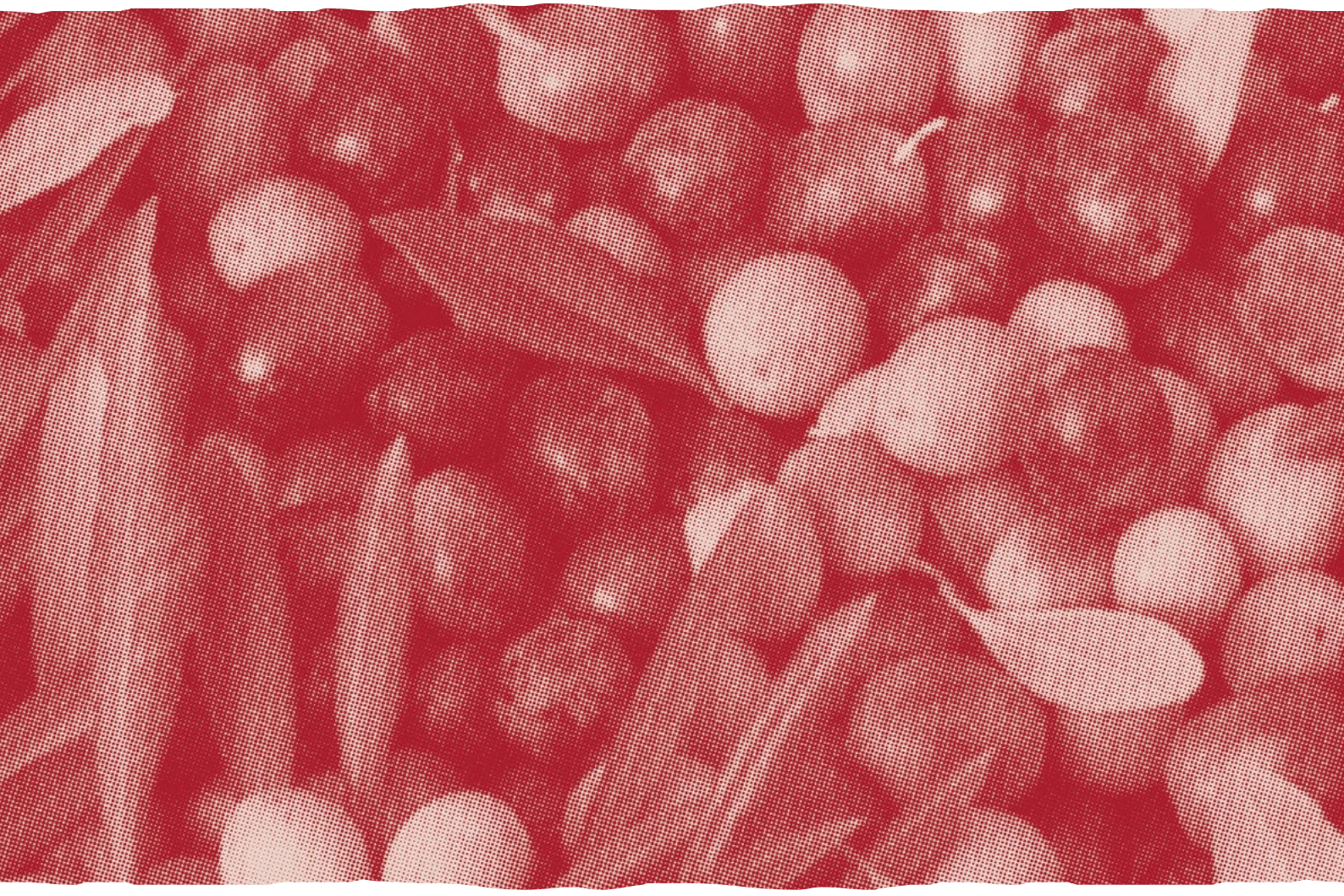
SECTION SIX

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.

The olive industry levy is solely for R&D investment. Outcome 2 of this SIP seeks to deliver improvements in demand for Australian olive products, but these will only be realised if R&D-based deliverables are taken up by the industry to improve demand-building activities. This is outlined clearly in the SIP logic.

No other significant or specific risks were found to be worth noting.



APPENDIX 1: Process to develop this plan

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

1. A first draft of the plan was prepared, based upon the documents listed in ***Appendix 4***, other research and discussions with the AOA and Hort Innovation. Comment on this first draft was sought from AOA and Hort Innovation
2. The main elements of the second draft were presented to the olive industry SIAP at its inaugural meeting on April 8, 2016 in Melbourne. The SIAP meeting focused on the SWOT and its implications for the program, the logic of the program (KPIs and targets) and the specific strategies, with indicative activities, to be included in the plan. The SIAP also advised on gaining widespread industry input to the plan
3. The outcomes of the SIAP meeting were incorporated into a third draft of the plan
4. Eight olive industry participants, whose names were provided by Hort Innovation and AOA, were then contacted to test the priorities as identified to that point. Interviewees were selected to provide a cross-section of geography and enterprise type
5. The Board of AOA reviewed this draft at its meeting of June 24, 2016 and provided comments
6. The draft was again revised. The SIAP met for a second time on August 11, 2016 and reviewed the draft, focusing on priorities within the proposed strategies and the allocation of resources between objectives. Following further revisions, the draft SIP was presented at the National Olive Industry Conference at Geelong on October 2, 2016. Hort Innovation also manned a stand at the conference, which featured posters of the outcomes and strategies of the draft SIP. Hort Innovation staff and the consultants discussed the draft SIP with attendees and minor changes were made as a result
7. This draft has been made available for public comment before modification where needed and finalisation.

APPENDIX 2: Consultation and validation

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

Robert Armstrong	ALTO Olives
Anne Ashbolt	Ashbolt Farms
Rita Bikins	Red Rock Olives, olive SIAP member
Peter Birch	Thunderbolt's Olives
Neil Burgess	Hort Innovation
Stuart Burgess	Hort Innovation
Will Gordon	Hort Innovation
Kent Hallett	Olive Oil Packaging Services
Michael Harbison	Nangkita Olives, SIAP member
Peter Herborn	Hunter Olive Processing, olive SIAP member
Rod Mailer	Australian Oils Research, olive SIAP member
Christine Mann	Glendale Olives
Paul Miller	Paul Miller and Associates
Annetta Paterson	Nullamunjie Olives
Leandro Ravetti	Boundary Bend Ltd, olive SIAP member
Lisa Rowntree	Australian Olive Association, olive SIAP member
Tim Smith	Boundary Bend Ltd, olive SIAP member
Robert Spooner-Hart	Western Sydney University, olive SIAP member
John Symington	Oasis Olives
Vincent Tana	Sumich Group
Kevin Whithear	Mt Bernard Olives, olive SIAP member

In addition, a survey of industry participants was undertaken by AOA in December, 2015. The survey attracted 77 respondents. It asked questions about what success in the industry would look like, perceived industry opportunities and challenges and priority strategic activities. The outcomes of the survey were taken into account in this SIP.

APPENDIX 3:
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.*					

APPENDIX 4: Reference documents

Australian Standard for Olive Oils and Olive Pomace Oils AS5264-2011

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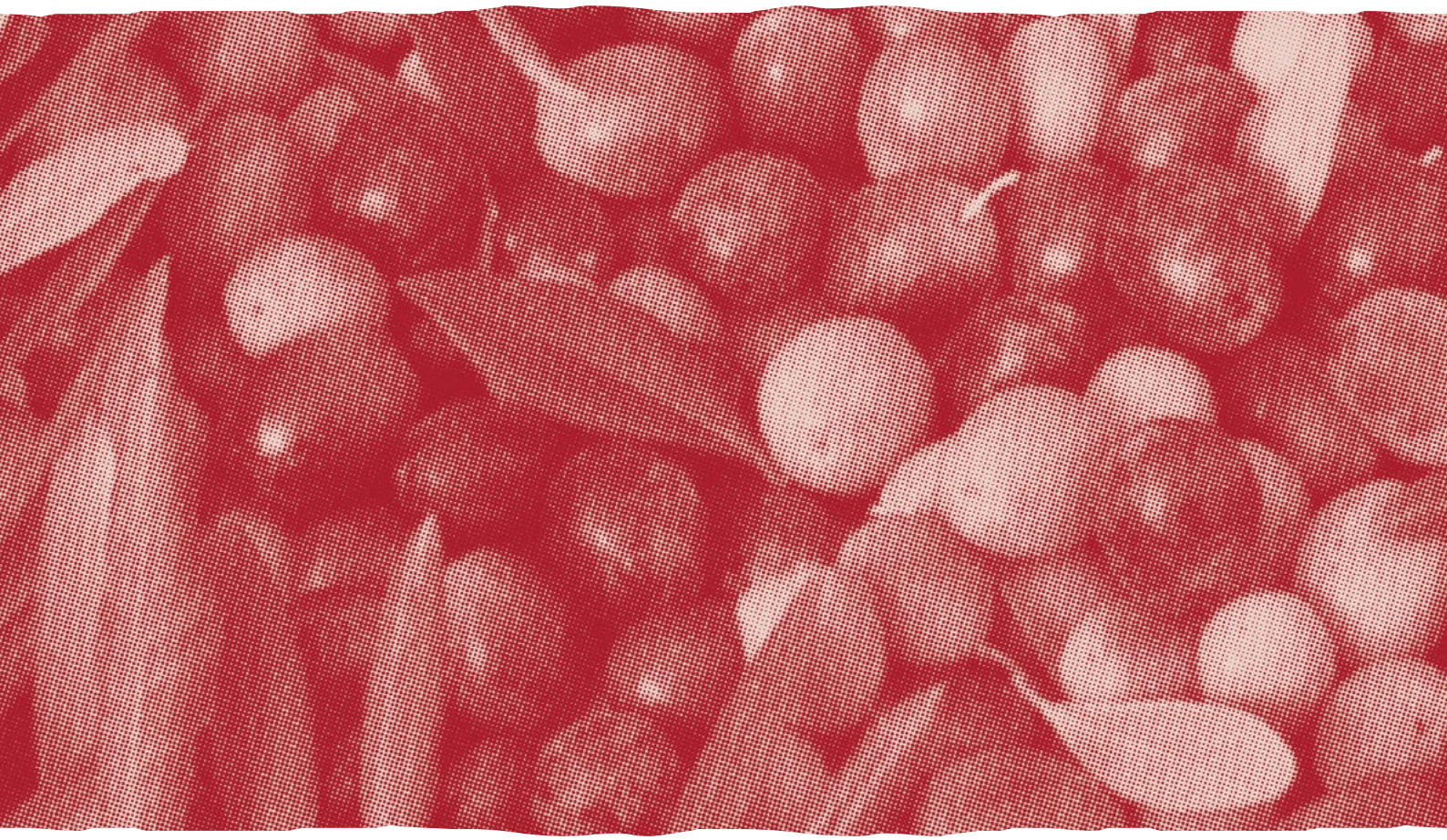

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