# Potato

Strategic Investment Plan

2022-2026



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## **EXECUTIVE SUMMARY**

The overarching strategic intent of this Strategic Investment Plan (SIP) is to reduce the cost of production and improve the sustainability of production practices with effective management of pests, diseases, weeds and biosecurity threats. Growth in domestic and international consumer demand is also a focus for the fresh (non-processing) potato industry.

The potato SIP 2022-2026 provides a roadmap to guide Hort Innovation's investment of both fresh potato and processing potato industry levies and Australian Government contributions, ensuring investment decisions are aligned with industry priorities.

The Australian potato industry situation in 2019/20 is described on *page 4* with further information provided in *Appendix 1*. Total potato production volume has not fluctuated significantly over many years, with 1,388,859 tonnes (fresh – 443,674 tonnes; processing – 904, 936 tonnes) produced in 2019/20, delivering a total farmgate value of \$716 million.

The majority of potato production in Australia is based in South Australia (38%), Tasmania (24%) and Victoria (21%), with lower volumes produced in New South Wales (8%), Western Australia (5%) and Queensland (4%).

The strategic intent of the potato SIP provides a summary of how the potato industry – both fresh and processing – will change over the life of the SIP. This is focused on reducing the cost of production and improving the sustainability of production practices, with effective management of pests, diseases, weeds and biosecurity threats. In addition, the fresh potato industry is focused on growth in domestic and international consumer demand.

The financial estimates give an indicative overview of the funding availability for the period of FY2022-FY2026. Currently, both the fresh potato and processing potato research and development (R&D) funds have capacity to invest over the life of the SIP. Careful prioritisation of investment needs is required by industry over the next five years.

The four outcome areas of this SIP cover significant themes under which programs and investments will be focused. These are listed in priority order for the potato industry with the highest priority being the continued extension of best practices in biosecurity, precision input management, soil, and plant health. This is followed closely by developments in industry supply, productivity and sustainability, which will ensure increased profitability, efficiency and sustainability through innovative R&D and sustainable best management practices (BMPs).

The key performance indicators (KPIs) detail how the impact of each strategy will be measured, for example, reduced impact of and recovery from exotic and soil-borne pests to crop protection solutions to meet industry priority needs as identified in the industry Strategic Agrichemical Review Process (SARP) or biosecurity plan.





#### **PRODUCTION VOLUMES:**



1,388,859 tonnes

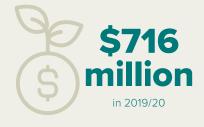
in 2019/20

#### PRODUCTION WINDOW:



**Year-round** 

**FARMGATE VALUE:** 



NUMBER OF GROWERS AND PROCESSORS:

Approx. **832** growers

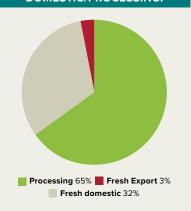
**Source:** ABS 2019/20



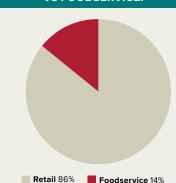
Approx. 40 processors

Source: PPAA 2019/20

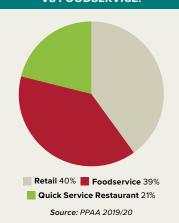
### FRESH EXPORT/FRESH DOMESTIC/PROCESSING:



### FRESH POTATO RETAIL VS FOODSERVICE:



### PROCESSING POTATO RETAIL VS FOODSERVICE:



#### PER CAPITA CONSUMPTION:



17 kg

## THE POTATO STRATEGIC INVESTMENT PLAN

This SIP is the roadmap that will guide Hort Innovation's oversight and management of the potato industry's investment programs. It lays the foundation for decision-making in investments and represents the balanced interest of the potato industry. The important function of this SIP is to ensure that the investment decisions align with potato industry priorities.

Hort Innovation has led the process for preparing the refresh of the potato SIPs and combining them into one comprehensive SIP, listening and engaging with levy payers and key stakeholders including Industry Representative Bodies (IRBs) and expertise available through advisory mechanisms and delivery partners. The refresh process involved consultation with and input from a wide range of levy payers, objective analysis of performance and learning from the previous SIPs, as well as environmental scanning to identify emergent trends and issues that could impact on industry profitability and sustainability.

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

The whole-of-company approach taken by Hort Innovation to produce this SIP has harnessed existing external and internal knowledge, learning, partnerships and relationships. The output is a tailored plan with which the potato industry can be confident of its strategic intent, including visibility on how investment impacts will be identified. Specific investments to address the SIP strategies and align with industry strategic priorities will be outlined in detail via the fresh potato and processing potato Annual Investment Plans (AIPs). The AIPs will be published each year over the lifespan of the SIP and detail the investments that will be prioritised based on potential industry impact, as well as the availability of levy funds. Hort Innovation will advise industry stakeholders when the AIPs have been published via established communication channels each year. The AIPs will be developed with input from the potato Strategic Investment Advisory Panels (SIAPs), IRBs and other key stakeholders.

Producers in the potato industry pay levies to the Department of Agriculture, Water and the Environment, 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 potatoes that are produced in Australia and either sold by the producer or used by the producer in the production of other goods. The R&D levy rate on unprocessed potatoes is set at 48 cents per tonne, whilst the R&D levy rate on processing potatoes is set at 49 cents per tonne.

Hort Innovation has developed this SIP for the potato industry (growers and processors) to strategically invest the levy funds into the priority areas identified and agreed by the potato industry.

This SIP represents the Australian potato industry's collective view of its R&D needs over the next five years (2022-2026). Learning, achievements and analysis of the previous SIPs, consultation with Australian potato levy payers, and synthesis of various strategic documents have been incorporated into the development of this SIP. *Appendix 3* acknowledges the people who were consulted in the preparation and validation of this SIP. Statistics and data within this publication are sourced from the Australian Horticulture Statistic Handbook 2019/20 and other documents unless stated otherwise and are listed in *Appendix 4*. A list of acronyms used within the document is available in *Appendix 5*.

#### **Financial estimates**

The annual revenue from levy income and Australian Government contributions for eligible R&D set the overall budget parameters for the SIP. Importantly, a portion of these funds is already committed, as the industry has current multi-year projects for R&D activities. In addition, the levy income from year to year will vary due to changes in seasonal and market conditions.

The financial estimates used for the purpose of developing this SIP are presented in *Table 1* below and are indicative. The intention of the table is to offer a strategic overview of the industry fund at a specific point in time, and the figures will be regularly reviewed to reflect the latest information for the industry and any changes in investment priority. Further details will be available within the fresh potato and processing potato AIPs each year.

TABLE 1. Indicative financial estimates for the potato SIP over the life of the SIP

	2022 \$	2023 \$	2024 \$	2025 \$	2026 \$
R&	D - FRESH POTA	ATO (NON-PROC	ESSING)		
Balance end FY2021	554,809				
Estimated levy funds (growers)	600,000	600,000	600,000	600,000	600,000
Australian Government contribution	901,293	668,701	552,405	482,628	465,184
Current investments	950,000	550,000	350,000	130,000	-
New investments	600,000	600,000	600,000	700,000	800,000
Total project investments	1,550,000	1,150,000	950,000	830,000	800,000
CCR	252,586	187,403	154,811	135,256	130,367
Projected end balance	240,000	160,000	200,000	250,000	350,000

R&D - PROCESSING POTATO					
Balance end FY2021	934,452				
Estimated levy funds (processors)	400,000	400,000	400,000	400,000	400,000
Australian Government contribution	858,367	623,198	487,976	487,976	382,150
Current investments	760,000	460,000	330,000	330,000	150,000
New investments	700,000	600,000	500,000	500,000	500,000
Total project investments	1,460,000	1,060,000	830,000	830,000	650,000
CCR	256,734	186,396	145,951	145,951	114,299
Projected end balance	460,000	230,000	135,000	50,000	95,000

Disclaimer: All figures are indicative only and may change depending on actual income and expenditure.

Balance end FY2021 – The closing balance of the fund as at 30 June 2021

Estimated levy funds – Net levy income/revenue that is generated and collected by levy revenue services (LRS)

Australian Government contribution – Amount of contribution from the Australian Government on R&D levy-funded expenditure

Current investments – Current estimated value of contracted projects

New investments - The estimated dollar value that is available for potential new investments for industry subject to industry advice

CCR – Corporate cost recovery: the cost to implement and manage R&D and marketing investment programs for each industry

Projected end balance – Forecast of the anticipated final position of the fund

HORT INNOVATION 6 POTATO STRATEGIC INVESTMENT PLAN – 2022-2026

## POTATO INDUSTRY OUTCOMES



The overarching strategic intent of this SIP is to reduce the cost of production and improve the sustainability of production practices with effective management of pests, diseases, weeds and biosecurity threats. Growth in domestic and international consumer demand is also a focus for the fresh (non-processing) potato industry.

#### **Industry outcomes**

Outcome statements as identified and prioritised by the potato industry have been prepared under four key outcome areas: extension and capability; industry supply, productivity and sustainability; demand creation; and business insights.

OUTCOME 1: Extension and capability
Building capability and innovative culture.

Building capability and an innovative culture will support the relevant investment outputs across the supply and demand initiatives to better manage risk and create positive change.

The strategic intent of this outcome is to the manage knowledge, relationships, systems and processes required to communicate effectively with internal and external stakeholders. Achieving the outcome will involve:

- A change in knowledge, attitude, skills, aspiration (KASA) and practice for grower/industry profitability and sustainability through use of best practice and innovation
- Growers, value chain, media and governments being well informed on industry initiatives and achievements as a vital part of regional communities and networks
- Increased on-farm use of R&D outputs which will build a more resilient industry in addition to improved networks and cross-industry collaboration
- Proactive strategic and evidence-based decision-making in businesses and for industry on investment, priorities and risk management.



#### **OUTCOME 2:** Industry supply, productivity and sustainability

Improve industry productivity (inputs/outputs) to maintain local and international competitiveness and viability of supply.

Supply and productivity will be supported through improvements to production efficiencies that will drive profitability outcomes, while ensuring long-term sustainability outcomes.

The strategic intent of this outcome is to accelerate the application of production practices that optimise returns and reduce risk to growers. Achieving the outcome will involve:

- Accelerating widespread use of existing and new R&D findings and proven management practices that will help growers to reduce the costs and impacts associated with pests, weeds and diseases
- Advances in productivity and biosecurity through a proactive and prepared industry
- New knowledge and understanding of sustainable production systems for Australian potato growers including precision inputs, management of salinity, enhanced soil health and improved water and nutrient use efficiency
- Proactively monitoring potential crop protection regulatory threats and having access to a broader suite of effective, socially acceptable and environmentally sound crop protection solutions.

#### **OUTCOME 3: Demand creation**

Grow consumer demand for fresh potatoes in domestic and international markets to support farmgate grower returns.

The Australian fresh potato industry will develop existing and future domestic and international markets. This will contribute to improved consumer knowledge and attitudes and encourage purchase intent to drive category volume growth.

The strategic intent of this outcome is to maintain and strengthen consumer demand for fresh potatoes as the foundation for sustainable expansion of production and consumption in domestic and international markets. It means the industry is investing to:

- Support product positioning with consistent quality, evidence of beneficial product nutrition attributes and responsible industry production practices
- Identify and prioritise export and domestic market niches where there is demand and growth potential for competitive supply of quality Australian fresh potatoes.

#### **OUTCOME 4: Business insights**

Measure industry supply (production) and demand (consumer behaviour) data and insights to inform decision-making.

#### Business insights will support the industry to remain aware of market and industry trends to drive informed decision-making.

The strategic intent of this outcome is to deliver data and insights which is foundational to achieving success in the other three outcome areas of demand creation; supply, productivity and sustainability; and extension and capability.

Achieving the outcome will involve reliable baseline data and analysis to provide insights and understand current and emerging trends. Key investments will support the provision of consumer knowledge and tracking, trade data and independent reviews to enable better decision-making process at industry level and individual businesses.

These investments underpin and are complementary to delivery of the other outcome areas.



## POTATO INDUSTRY STRATEGIES



#### Strategies to address industry investment priorities

The strategies and identified impacts for each of the key outcome areas are described in the tables below. The highest priority investments lay the foundation for the SIP, and its implementation will require a balanced approach to ensure the industry has a high likelihood of success over the short term (0-3 years), medium term (3-5 years) and long term (5-10 years).

The ability to deliver on these strategies (and subsequent investments) will be determined by the ability of the statutory levy to provide the resources to do so. Further resources and efficiencies may potentially become available through alternative funding sources by way of Hort Frontiers strategic partnership initiative, external grants and/or cross-industry initiatives.

#### **OUTCOME 1: Extension and capability**

Improved capability and an innovative culture in the Australian potato industry maximises investments in productivity and demand.

STRATEGIES	POTENTIAL BENEFIT OR IMPACT
<ol> <li>Deliver extension and communication capabilities to support industry best practices in biosecurity, precision input management, soil and plant health, and meeting quality expectations and trade development (for the fresh potato industry)</li> </ol>	<ul> <li>A change in KASA and practice for grower and industry profitability and sustainability through use of best practice and innovating, (e.g., export readiness and capability programs)</li> <li>Broad awareness of industry initiatives and achievements as a vital part of regional communities and networks</li> </ul>
Provide opportunities for engagement between industry, across potato and vegetable industry members and stakeholders, domestically and internationally	<ul> <li>Improved networks and cross-industry collaboration to increase efficiencies and use of R&amp;D outputs to build a stronger, more resilient industry</li> <li>Strengthened networks between potato industry participants in Australia and internationally</li> </ul>
Grow industry leadership through initiatives and training for the current work force, increasing horticulture as a career choice and bringing new people into the industry	Proactive, strategic and evidence-based decision-making in businesses and for industry on investment, priorities and risk management



#### **OUTCOME 2:** Industry supply, productivity and sustainability

The Australian potato industry has increased profitability, efficiency and sustainability through innovative R&D and sustainable BMPs.

STRATEGIES	POTENTIAL BENEFIT OR IMPACT
Identify and support opportunities to improve productivity and sustainability through effective integrated pest and disease management (IPDM), weed control, soil health and cover crops	Efficient production systems for potato growers     Improved sustainability outcomes for growers and the environment
Develop resources for precision input management to reduce costs and maintain yield and quality in a changing climate, including water and nutrient use efficiency and salinity management	<ul> <li>Inputs are used and managed efficiently and effectively, improving the profitability and sustainability of production systems</li> <li>Reduced cost of production through greater understanding of inputs</li> <li>Reduced nutrient and water use</li> </ul>
Enhance industry biosecurity preparedness and resilience, including preparedness, surveillance and diagnostics	<ul> <li>Reduced impact of, and recovery from, exotic and soil-borne pests</li> <li>Better understanding of the presence, prevalence and distribution of endemic and exotic soil-borne pests</li> <li>Support of market access through improved knowledge on the presence/absence of exotic pests</li> </ul>
Identify advances in automation and emerging technology opportunities to support labour use efficiency, compliance and input management	Improved labour efficiency     Advanced compliance systems available     Improved input/resource management
5. Prioritise the major crop protection gaps through a SARP*	Available registered or permitted pesticides are evaluated for overall suitability against major disease, insect pests and weed threats. Where tools are unavailable or unsuitable the SARP aims to identify potential future solutions
6. Provide regulatory support and co-ordination for crop protection regulatory activities with the potential to impact plant protection product access, both in Australia and internationally*	Regulatory Risk Assessments have informed proactive strategic priority setting to avoid pest management gaps in the event access or use is negatively impacted
7. Generate residue, efficacy and crop safety data to support applications to the Australian Pesticides and Veterinary Medicines Authority (APVMA) that seeks to gain, maintain or broaden access to priority uses for label registrations and/or minor use permits for crop protection needs*	Crop protection solutions meet industry priority needs as identified in the industry SARP or biosecurity plan



#### **OUTCOME 3: Demand creation**

Demand creation supports the Australian fresh potato industry to develop existing and future domestic and international markets.

STRATEGIES	POTENTIAL BENEFIT OR IMPACT
Increase domestic and international consumer demand for fresh, quality Australian potatoes through improving knowledge, attitudes and purchase intent	<ul> <li>Increased consumer demand for Australian potatoes</li> <li>Increased awareness of health benefits of potatoes</li> </ul>
2. Increase consumer demand in high value export markets	<ul><li>Increased share in existing markets</li><li>Increased consumer demand in new markets</li></ul>
Deliver an up-to-date export strategy and access to trade expertise for fresh potatoes	<ul> <li>Development of industry export strategic plan 2022-2026</li> <li>Access to new high value markets</li> </ul>
Improve technical access to high value markets as identified within the export strategic plan	<ul> <li>Improved access to new and existing high value markets</li> <li>Increased exports and grower capability</li> </ul>

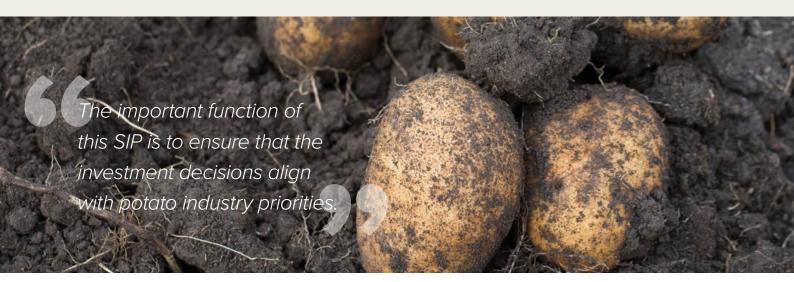
#### **OUTCOME 4: Business insights**

The Australian potato industry is supported by consumer knowledge and tracking, trade data and independent reviews to drive informed decision-making.

STRATEGIES	POTENTIAL BENEFIT OR IMPACT
Increase fresh potato industry alignment with quality and brand-positioning opportunities driven by consumer insights*	Provision of business insights to the fresh potato industry to deliver against demand, supply and extension outcomes
Use trade data to guide ongoing export development opportunities for fresh potatoes*	Increased industry export capacity

<sup>\*</sup> Foundational investments provide data and information that underpin the delivery of other SIP outcome areas and will be aligned to this strategy. Foundational investment areas include:

- Consumer behavioural data
- Consumer usage and attitudes, and brand health tracking data
- Impact assessments
- Trade data
- Crop protectant data.







The potato SIP Monitoring and Evaluation (M&E) Framework development has been informed by Hort Innovation's Organisational Evaluation Framework.

Progress against the SIP will be reported in Hort Innovation publications and through industry communication channels. The SIP outcomes and strategies are used to inform KPIs that in turn drive the investments and individual projects to deliver on the SIP. Projects responsible for delivering the strategy aligned with each KPI will collect the data.

An M&E and reporting framework is shown below. The framework shows what will be measured to demonstrate progress against the SIP and how metrics will be tracked. Reporting on KPIs will be processed through various formal channels to inform industry and government investors of progress, performance, and impact. Data sources to support M&E will be identified and collected as part of the requirements for each levy investment.

Hort Innovation will facilitate the regular review of the SIP to ensure it remains relevant to industry.

#### **Potato SIP Monitoring and Evaluation Framework**

The potato SIP M&E Framework is shown below. It includes KPIs and data collection methods both at a macro/industry (trend) level and at more specific SIP strategic level/s.

ОUTCOME	STRATEGIES	KPIs
Extension and capability		
Outcome 1: Improved capability and an innovative culture in the Australian potato industry maximises investments in productivity and demand.	Deliver extension and communication capabilities to support industry best practices in biosecurity, precision input management, soil and plant health, meeting quality expectations and trade development (for the fresh potato industry)	Establishment of a baseline to develop relevant measurables and demonstrate increased share of industry (hectares) with positive change in KASA, practice and impact in targeted high-priority areas (e.g., quality, biosecurity, soil health, plant health)
	Provide opportunities for engagement between industry, across potato and vegetable industry members and stakeholders, domestically and internationally	Demonstrated growth in cooperation within industry and across industries leading to business and industry innovations
	Grow industry leadership through initiatives and training for the current work force, increasing horticulture as a career choice and bringing new people into the industry	<ul> <li>Increased participation in leadership programs and leadership roles within industry</li> <li>Participants of new entrant programs see horticulture as a long-term career choice</li> </ul>

ОИТСОМЕ	STRATEGIES	KPIs
Industry supply, productivity	and sustainability	
Outcome 2: The Australian potato industry has increased profitability, efficiency and sustainability through innovative R&D and sustainable BMPs.	1. Identify and support opportunities to improve productivity and sustainability through effective IPDM, weed control, soil health and cover crops	<ul> <li>New growing systems' feasibility established and evaluated in collaboration with growers</li> <li>Pest and disease management strategies are developed that mitigate crop loss in collaboration with growers</li> <li>Increased knowledge and adoption of cover cropping and mixed cropping</li> <li>Plantings are optimised for production efficiency, sustainability and improved profitability</li> </ul>
	Develop resources for precision input     management to reduce costs and maintain     yield and quality in a changing climate,     including water and nutrient use efficiency     and salinity management	<ul> <li>Development of resources to improve the management of production inputs in collaboration with growers</li> <li>Growers have options to reduce productions costs and labour inputs</li> </ul>
	Enhance industry biosecurity preparedness and resilience, including preparedness, surveillance and diagnostics	<ul> <li>Maintenance/tracking of the implementation of biosecurity plan</li> <li>Development of risk analyses of high priority seed-borne and soil-borne pests including entry pathways, establishment and spread potential</li> </ul>
	Identify advances in automation and emerging technology opportunities to support labour use efficiency, compliance and input management	<ul> <li>Technology solutions identified that provide improved labour efficiency</li> <li>Growers have increased knowledge and adoption of automation, quality and resource management</li> </ul>
	5. Prioritise the major crop protection gaps through a SARP*	<ul> <li>Coordinated industry priority-setting with a clear outlook of gaps and risks in existing pest control options</li> <li>Industry priority needs published and shared with stakeholders, including registrants</li> </ul>
	Provide regulatory support and     co-ordination for crop protection regulatory     activities with the potential to impact plant     protection product access, both in Australia     and internationally*	Regulatory Risk Assessments maintained
	7. Generate residue, efficacy and crop safety data to support applications to the APVMA that seeks to gain, maintain or broaden access to priority uses for label registrations and/or minor use permits for crop protection needs*	Data to support applications to the APVMA and the establishment of Maximum Residue Limits (MRLs)

ОUTCOME	STRATEGIES	KPIs
Demand creation		
Demand creation supports the Australian fresh potato industry to develop	Increase domestic and export consumer demand for fresh, quality Australian potatoes through improving knowledge, attitudes and purchase intent	Positive influence on consumer preference     Use of nutritional information to support consumer demand
existing and future markets, both domestically and internationally.	Increase consumer demand in high value export markets	<ul><li>Growth in export market share of production</li><li>Development of an export strategy for</li></ul>
	Deliver an up-to-date export strategy     and access to trade expertise for fresh     (ware) potatoes	new markets in collaboration with growers  • Support for technical access to selected export markets (e.g., case studies)
	Improve technical access to high value     markets as identified within the export     strategic plan	
Business insights		
Outcome 4: The Australian potato industry is more profitable through informed decision-making using consumer knowledge and tracking, trade data, production statistics and independent reviews.	Increase fresh potato industry alignment with quality and brand-positioning opportunities driven by consumer insights*	<ul> <li>Delivery of consumer insights strategy</li> <li>Evidence that consumer insights inform market engagement (e.g., case studies)</li> <li>Availability of new consumer knowledge for growers</li> </ul>
	Use trade data to guide ongoing     export development opportunities     for fresh potatoes*	Trade data maintained and tailored data outputs supplied to meet stakeholders' needs

<sup>\*</sup> Foundational investments provide data and information that underpin the delivery of other SIP outcome areas and will be aligned to this strategy. Foundational investment areas include:

- Consumer behavioural data
- Consumer usage and attitudes, and brand health tracking data
- Impact assessments
- Trade data
- Crop protectant data.

#### **Reporting framework**

Hort Innovation will use dynamic reporting aligned to the Organisational Evaluation Framework to report regularly on progress and performance. Reporting will be processed through formal channels to inform industry and government investors.

A review of investment performance against the respective industry outcome and/or strategy-level KPIs for the potato SIP will be completed annually as the primary reporting mechanism. The SIP performance report will provide:

- Evidence of progress towards achieving the industry-specific outcomes and strategies through an assessment of the KPIs identified in the SIP
- Evidence of progress towards cross-industry investment strategies and outcomes. It will involve Hort Innovation's whole-of-horticulture reporting obligations and corporate plan and involve annual reports and Hort Innovation's Annual Operating Plan.

SIP performance reports will also inform the Australian government of progress towards achieving government priorities. In particular, reporting will support Hort Innovation to meet the Performance Principles and requirements contained in the Deed of Agreement 2020-2030.

## COLLABORATION AND CROSS-INDUSTRY INVESTMENT



Based on advice from industry throughout the engagement process, Hort Innovation understands that Australian horticulture industries have common issues, and in turn have identified prospective areas for collaboration and cross-industry or regional investment.

These opportunities have been included as strategies across multiple industry SIPs where relevant and required. By delivering targeted multi-industry collaboration in research, development and extension (RD&E), marketing and international trade, Hort Innovation aims to support more effective and efficient outcomes for growers and the wider horticulture sector. This includes driving investment through the Hort Frontiers strategic partnership initiative. Importantly, while this approach acknowledges there is value in solving issues across industries and regions, it does not reduce the importance of industry-specific initiatives.

Cross-industry/regional R&D opportunities identified for the potato industry include:

- Soil wealth programs
- Sustainable farming systems including nutrient and wateruse efficiency programs.

Cross-industry areas of collaboration for demand-driving outcomes provide the opportunity to advance the prosperity of the sector through gaining efficiencies in the delivery of the program and contributing to stronger overall outcomes. By collaborating as one sector to win the hearts and minds of the consumers, in addition to individual demand-driving programs, there is the potential to enhance the total category value proposition, contributing to driving returns for Australian growers.

Areas of consideration for collaboration for demanddriving outcomes across the lifespan of the potato SIP 2022-2026 include:

- All-of-horticulture consumer marketing campaigns designed to drive awareness, consideration, and purchase behaviour change
- Communications to bring horticulture to top of mind (saliency) and reposition the benefits they provide to Australian and international consumers
- Retail partnerships to advance total category and shopper demand-driving programs
- A global brand platform to reinforce the unique selling proposition of Australian-grown horticultural produce and drive preference with international consumers.

#### Strategic science and research focus

The potato SIP takes into consideration the research priorities of various industry stakeholders, including the Potato Processing Association of Australia (PPAA), AUSVEG and Australian Fresh Produce Alliance (AFPA), and acknowledges the representation of these organisations. In developing the strategies presented within the potato SIP, the following strategic research areas have been considered:

- Food health
- Seed certification
- Plant health
- Sustainability
- Trade
- Biosecurity
- Food Safety.

Collaboration across the agriculture research community is also essential, including with organisations such as the CSIRO, universities, private enterprise and state government agencies. Hort Innovation is a member of the National Horticulture Research Network (NHRN) together with other senior horticultural R&D representatives from state and Australian Government agricultural agencies. The NHRN is responsible for the development and implementation of the broader Horticulture RD&E Strategy under the National Primary Industries RD&E Framework.

During the engagement process, key delivery partners were contacted including lead agencies within the NHRN Framework as well as specific delivery partners for each industry. The lead agency involved with the potato industry investment program, South Australian Research and Development Institute (SARDI), was engaged during the development of this SIP to ensure consideration and strategically aligned priorities for the potato industry. In addition, priorities and opportunities identified within the strategic plans of national and state agencies and research organisations have been considered where applicable.

**TABLE 2.** Government and key agency priorities

SARDI priorities	Rural RD&E for Profit priorities	Australian Government Science and Research priorities
Implementation technology and monitoring in crop management	Advanced technology	Food
Integrated pest and disease management	Biosecurity  Soil, water and managing natural resources	Soil and water  Advanced manufacturing  Environmental change
Maintain access to high quality seed	Adoption of R&D	Health

This SIP has been developed alongside the government and key agency priorities listed in *Table 2*, with consideration of issues faced by the potato industry. These strategic areas further emphasise the opportunity and importance of cross-industry and regional collaboration. All the priority areas are of importance to Australian horticulture, and these will play a role in driving the efficiency and effectiveness of investment across the sector.

#### **Annual investment planning**

Specific investments to address the SIP strategies and align with industry strategic priorities will be outlined in detail each year via the fresh potato AIP and the processing potato AIP. Investment decisions are guided by the SIP and prioritised based on potential industry impact, as well as the availability of levy funds each year. The AIP will be developed with input from the potato SIAPs, which are made up of growers and other industry representatives as well as IRBs and other key stakeholders. Wherever possible, investments will be aligned to form multi-industry projects to increase the efficiency of funding availability. Details of the fresh potato SIAP can be found on the Hort Innovation website here, and the AIP will be published on the same page each year. Details of the processing potato SIAP can be found on the Hort Innovation website here, and the AIP will be published on the same page each year.



HORT INNOVATION POTATO STRATEGIC INVESTMENT PLAN – 2022-2026

#### **Hort Frontiers investment opportunities**

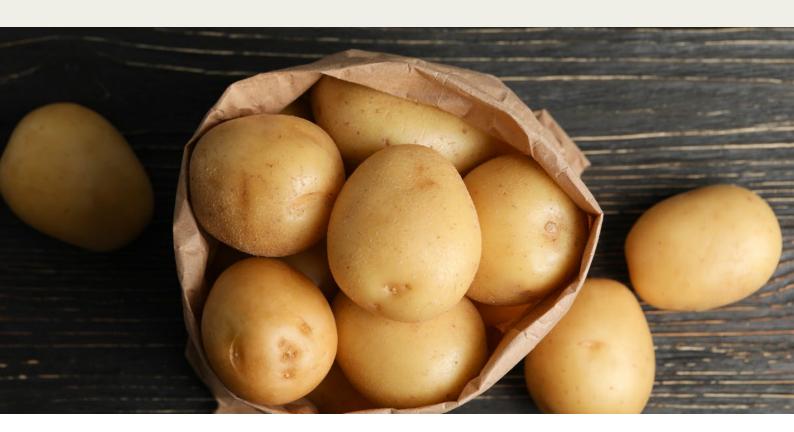
Innovation is key to the future success of Australian horticulture. The next evolution of the long-range, higher risk and transformational R&D that has the potential to make a significant impact will be possible through Hort Innovation's Hort Frontiers strategic partnership initiative.

Hort Frontiers is a strategic partnership initiative that facilitates collaborative, cross-industry investments focused on the longer term and more complex themes identified as critical for Australian horticulture by 2030. The partnership framework is currently being established and will include a number of key investment themes for potential investment to guide the initiative and drive transformational R&D across horticulture. Key investment themes will include:

- Environmental sustainability (water, soil and climate)
- Pollination
- Green cities
- Biosecurity
- Health, nutrition and food safety
- Advanced production systems
- International markets
- Leadership
- Novel food and alternate uses (waste reduction).

The development of these areas for investment will benefit all of horticulture, with support from partners with aligned priorities to co-invest in deliverables identified that require alternative funds available outside the levy. Hort Frontiers is being developed to align with the Australian-grown Horticulture Sustainability Framework and invest in specific impact areas to drive innovation and sustainability initiatives.

The potato industry views all the above investment areas as opportunities for success into the future. Partnering with Hort Frontiers on these areas would provide the potato industry with opportunities for access to world class research, specialised project management teams and large-scale R&D.



#### **Australian-grown Horticulture Sustainability Framework**

Hort Innovation has developed the Australian-grown Horticulture Sustainability Framework, aiming to strengthen the horticulture industry's sustainability to meet the changing expectations and needs of growers, consumers, the community, investors and governments. The framework applies across the whole of Australian horticulture, including fruits, vegetables, nuts, nursery stock and turf. Through widespread consultation with industry and external groups, proposed sustainability goals and indicators were identified and are detailed within the framework. The framework is aligned to the UN Sustainable Development Goals.

Four key pillars were identified in the framework (Figure 1).



The framework should be cross-referenced when undertaking prioritisation of investments. At the time of publication, Hort Innovation is working with industry groups regarding the overall responsibility for the framework, setting and reporting progress against the framework targets and performance measures.

View the Australian-grown Horticulture Sustainability Framework on the Hort Innovation website here.

Table 3 provides an example of a potato SIP strategy that illustrates how the industry is already aligning to the framework.

**TABLE 3.** A potato SIP strategy example showing how the industry is already aligning to the Australian-grown Horticulture Sustainability Framework

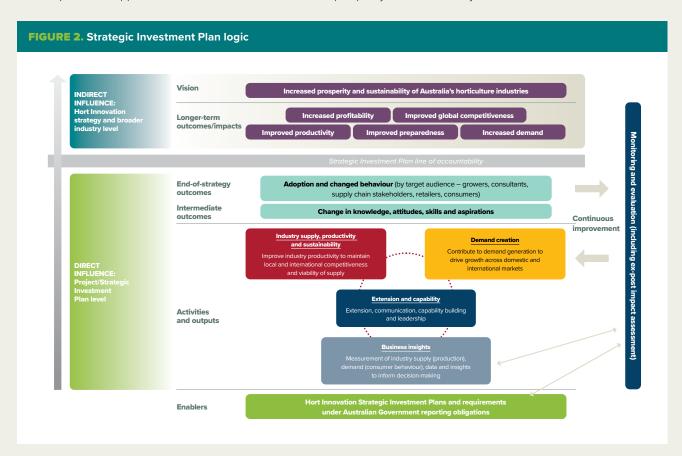
STRATEGY	IMPACT	SUSTAINABILITY GOAL
Develop resources for precision input management to reduce costs and maintain yield and quality in a changing climate, including water and nutrient use efficiency and salinity management	<ul> <li>Inputs are used and managed efficiently and effectively, improving the profitability and sustainability of production systems</li> <li>Reduced cost of production through greater understanding of inputs</li> <li>Reduced nutrient and water use</li> </ul>	Planet & Resources

## HORT INNOVATION



#### **Strategic Investment Plan logic**

The SIP logic (*Figure 2*) identifies how investment activities and outputs (delivered through each SIP outcome area) will support changes in industry KASA, which drive adoption and behaviour change. Beyond the SIP, investment will contribute to driving longer-term impacts for the sector like increased preparedness, demand, productivity, global competitiveness and profitability. Realising these impacts will support Hort Innovation's vision of increased prosperity and sustainability of Australia's horticulture industries.



## Aligning to Hort Innovation investment priorities

Hort Innovation is committed to sustainable growth in horticulture, with the overarching aim of increasing the sector's value to \$20 billion by 2030. We will do this through implementing the SIP and investments against the three core pillars, committed to:

- 1. Drive knowledge and innovation into horticulture industries
- 2. Deliver the highest value R&D, marketing and international trade investments across industries now and into the future
- 3. Enable activities that drive all strategic imperatives.

Hort Innovation is governed by a Deed of Agreement with the Australian Government, which allows for the transfer and investment of levies and Australian Government contributions. As a Research and Development Corporation (RDC), Hort Innovation is able to leverage industry levy investments in RD&E with Australian Government contributions up to a value of 0.5% of the industry's gross value of production. All investments made by Hort Innovation are thoroughly considered to ensure they contribute to the guiding performance principles:

- Productivity
- Profitability
- Preparedness for future opportunities and challenges
- Competitiveness
- Demand: demonstrates how productivity, preparedness and demand lead to profitability and competitiveness and sustainability.

## **APPENDICES**



#### **APPENDIX 1: Industry context**

#### Fresh potato

#### **Industry supply chain**

Potatoes are the largest horticulture industry in Australia in terms of production volume, and the largest vegetable industry in terms of production value.

Supermarkets secure their potato supply under long-term contractual arrangements, under which growers produce to a weekly supply program. Most of the supermarket contracts have 'rise and fall' pricing clauses linked to wholesale market prices.

This means oversupply on the speculative wholesale markets can influence prices for contracted supermarket production.

Over the past 20 years, the supermarket channel has transitioned into a closed-loop supply chain, with most of the product being sourced directly from growers through contractual arrangements based on long-term supply programs linked to a forecasted weekly demand. Accordingly, the volume of potatoes sold through central wholesale markets has steadily declined. The role of markets has shifted from being the mainstream supply channel to a secondary channel plus a clearinghouse for product that is surplus to supermarket requirements or does not meet the supermarkets' tight quality standards.

The trading dynamic has been intensely price-competitive between Australia's two major supermarkets. The entry of the super-discounters Aldi and Costco has brought another wave of downward pressure on prices of processed and fresh products.

This supermarket dominance has driven a period of consolidation within the washed potato sector. Industry sources estimate that 70% to 80% of washed potatoes are provided by the three integrated grower/washer/packer/ marketing companies that are large enough to offer the supermarkets national, year-round supply contracts and the required service levels. As well as growing to order on their own farms, some of these vertically integrated potato businesses source from contract growers. This closed loop trading environment has made it difficult for small to medium enterprise (SME) growers to achieve economies of scale because they cannot get access to the volume inherent in a supermarket contract.

These pressures have led to significant industry consolidation over recent years, as larger growers are able to take advantage of economies of scale and the opportunities that come with this to reduce per unit operational costs. Smaller growers must focus on efficiencies in technologies, unique value propositions and other resources available to them to continue to be competitive in this environment.



#### **Domestic consumers and drivers of demand**

Most fresh potatoes (approximately 80%) are distributed through retail outlets. Supermarkets hold the majority (approximately 70%) of retail market share. Relative to overall fruit and vegetable market share, independent green grocers under-trade in potatoes, which indicates that consumers see potatoes as a commodity with price being an important purchase factor. An estimated 15% of fresh production is sold through foodservice channels, and 5% is exported.

Potatoes are an Australian staple with an 87% household penetration. The average purchase weight is 1.5 kilograms and supply per capita is 17 kilograms.

#### **Export markets**



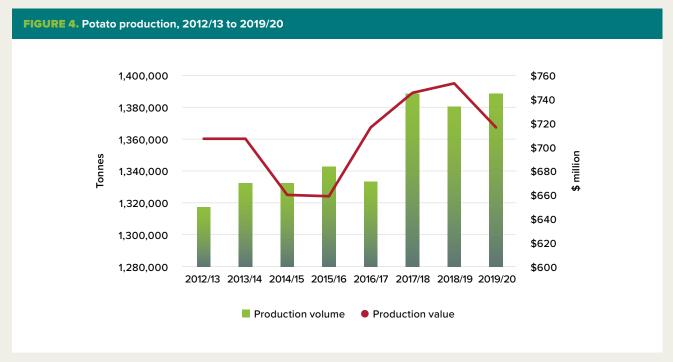
**Source:** Australian Horticulture Statistics Handbook (2019/20)

Potato exports have been a strong source of value growth for the industry, with stable export volumes over the past five years around 40,000 tonnes. Since 2015/16, export volume has grown by 8.2%, while export value has grown by 29.7%, showing that unit prices for exports have increased significantly over this period.

Asia has become the dominant market for exports, with the top five markets by volume being South Korea (32%), Philippines (18%), Indonesia (12%), Malaysia (8%) and Hong Kong (7%).



#### **Industry production**



**Source:** Australian Horticulture Statistics Handbook (2019/20)

Potato production has been on an upward trend, increasing from 1.32 million tonnes in 2012/13 to 1.39 million tonnes in 2019/20. This is an increase of only 5.5% showing that production is relatively consistent, and that the potato industry is mature. Over this same period, production value has increased from \$706 million in 2012/13 to \$716 million – an increase of 1.4%, showing that unit price has decreased over this period (*Figure 4*).

Australian vegetable-growing farms: an economic survey, 2017–18 by ABARES provided detailed information on the performance of vegetable farms, including specific information on potato production. The highest proportion of costs for potato growers are fertiliser (12%), hired labour (11%), family labour (11%) and seed (11%). These costs, however, are markedly different based on the scale production, with total costs of \$354 per tonne for growers on 40 hectares or fewer and \$262 per tonne for growers on greater than 40 hectares.

Water use on potato farms is relatively low for vegetable farms at 0.09 megalitres per tonne of output, compared to 0.30 megalitres per tonne for broccoli and 4.71 megalitres per tonne for pumpkins. Other vegetables at a similar level are tomatoes at 0.09 megalitres per tonne, onions at 0.08 megalitres per tonne and carrots at 0.07 megalitres per tonne.

Potato yields have grown from 37 tonnes per hectare in 2006/07 to 43 tonnes per hectare in 2017/18, showing there have been productivity improvements over the past 10 years<sup>1</sup>.

<sup>1</sup> Frilay J, Weragoda A, Litchfield F, Thompson T & Ashton D 2019, *Australian vegetable-growing farms: an economic survey, 2017–18 and 2018–19*, ABARES research report 19.12, Canberra, November. CC BY 4.0.

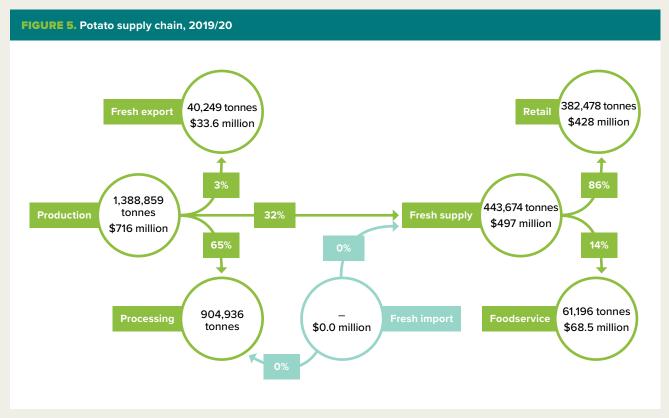


#### Processing potato

#### **Industry supply chain**

The processing potato industry includes production of French fries and related fried products, potato snacks such as crisps and other value-added products, and dry potatoes and ready-to-serve potato products. Levies are applied to the industry, and 90% of levies are accounted for by French fry and related fried products and crisping potatoes. The PPAA records indicate that there are 49 registered processors, with Simplot Australia; McCain Foods Australia; Lamb Weston Australia; Smiths (PepsiCo); and Snack Brands Australia being the largest organisations.

There are around five significant crisping processing factories located throughout Australia. These are mostly along east coast locations in Sydney, Brisbane, Adelaide and a smaller facility in the Yarra Valley. Because it is less desirable to store crisping potatoes, they are sourced from a wide geographic growing area nationwide and have an extended growing season as crisping processors need to source freshly harvested potatoes year-round. The significant French fry processing factories are located in Ballarat, Smithton, Ulverstone and Melbourne. Most processing potatoes procured by the major processors are sourced on an annual contract basis, subject to yearly price negotiations.



Source: Australian Horticulture Statistics Handbook (2019/20)

#### **Domestic consumers and drivers of demand**

Total consumption of potatoes in Australia is in long-term decline, however, processing potatoes that are grown for frozen products are increasing in share, largely because of the convenience and appeal of the quick service restaurant (QSR) offering.

Frozen potato product categories are extremely price sensitive and highly competitive. This results from them being primarily sold through QSRs and supermarkets. However, market growth is twice the rate in value growth than in volume growth, indicating a shift from commodity fries to higher value specialty products such as coated products and wedges. Private label products account for 19% of retail share and are increasing at the expense of branded products.

French fries can be easily and cost-effectively sourced by sea-freight, and it can often be cheaper for organisations to source frozen products from overseas, rather from within Australia. The predominant supply companies for these QSR organisations in Australia are Simplot Australia and McCain Foods Australia. Both have processing facilities globally and frequently source product from the most cost-effective country to fulfil Australian contracts.

The crisping category is highly competitive even though it has low exposure to import replacement. As the product is lightweight but very bulky, crisps are costly to transport. As a result, most snack products, except specialty snacks, are produced near where they are consumed. The snack market is growing strongly both in terms of volume and value.

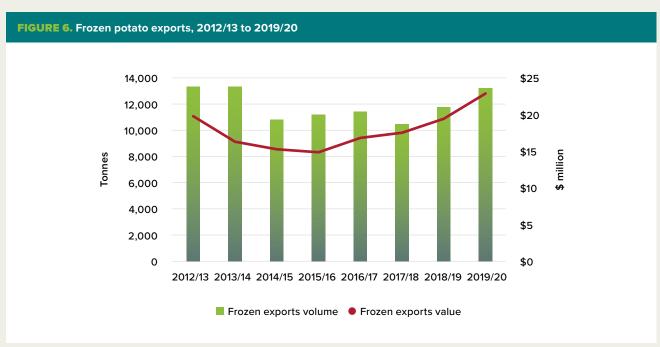
Potato snacks are predominantly retailed through supermarket and route trade channels such as petrol stations, convenience stores and cafés. Specialty snacks make up a significant proportion of the market – these include products like Kellogg's Pringles. Kellogg's holds more than 10% market share but does not process in Australia.

Australia has been an importer of frozen potato products since 2006. New Zealand is Australia's largest supplier of imports, followed by the USA and Europe. Oversupply in Europe can often lead to supply of low-cost frozen products on the Australian market. Strategic investment by foreign governments in frozen food processing has created a powerhouse in frozen categories – many smaller processors who are more agile than the major processors can capitalise on niche markets in Australia relatively easily with a lower cost product.

The operating environment in terms of supply and demand side factors can be summarised through the below:

- Frozen processing potato exports have seen unit price increases over the last seven years
- Australian processing supply volume is modestly increasing, and frozen import volumes remain unchanged this is mainly
  in the frozen processing sector, while the crisping sector has less exposure to import competition
- Australia has substantially higher costs than international competitors due to lower yields, smaller scale, more difficult
  growing conditions and high labour costs.

#### **Export markets**



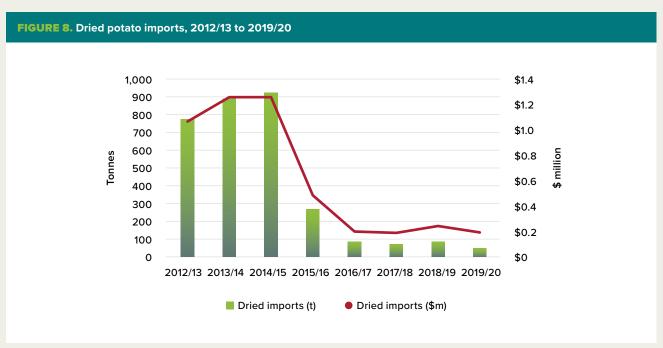
**Source:** Australian Horticulture Statistics Handbook (2019/20)

Processed potato exports occur exclusively in the form of frozen potato, with zero exports of dried potato. Exports have grown over the past two years from 10,398 tonnes in 2017/18 to 13,138 tonnes in 2019/20 to reach the volumes seen in 2012/13 and 2013/14. Value, however, is at its peak of \$23 million, showing that unit price has increased over the past seven years (*Figure 6*).



Source: Australian Horticulture Statistics Handbook (2019/20)

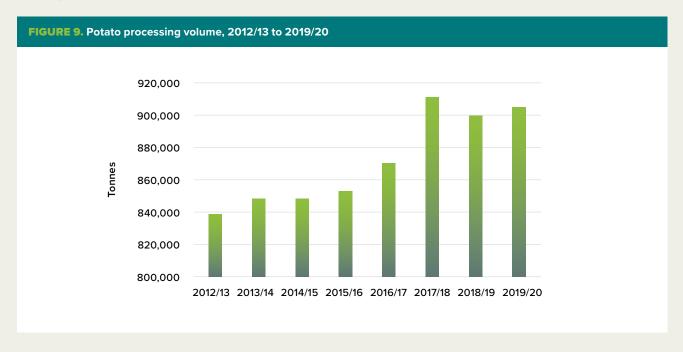
Frozen potato imports are over ten times that of frozen exports. They have been relatively stable over the past ten years, with a peak of 168,381 tonnes and \$206 million in 2017/18 (*Figure 7*).



**Source:** Australian Horticulture Statistics Handbook (2019/20)

In contrast to frozen imports, dried imports are very small and declining, showing evidence that the domestic industry for dried processed potatoes is protected from imports (*Figure 8*).

#### **Industry production**



**Source:** Australian Horticulture Statistics Handbook (2019/20)

Potato processing volumes have largely been on an upward trend since 2012/13, increasing from 838,003 tonnes to 904,936 tonnes over this period. This represents a modest average annual growth rate of 1.1%. The past two years have seen a slight decline in volume from the peak of 911,000 tonnes in 2017/18 (*Figure 9*).



#### **APPENDIX 2: Potato industry situation analysis**

At the time of refreshing the SIP in 2021, the global coronavirus (COVID-19) pandemic continues to affect horticulture industries to varying degrees. Although the outcome and ultimate impact of the pandemic are unknown, areas of investment across horticulture that may be influenced over the period of this SIP include export and trade relationships, domestic and international demand, logistics and supply chain, labour supply – all having potential impacts on grower profitability.

Environmental, economic and social sustainability are vitally important to Australian horticultural growers and industries. Customers, consumers, and investors also seek information about the sustainability and ethics of how their food is produced. Sustainability is particularly crucial as topics such as climate variability, health and ethics continue to shape the social, environmental, and political landscape for agricultural industries. The impact of these issues may have influence on a range of investment areas for horticulture from production practices and land management, demand and reputation of products, quality expectations and cultural/community engagement.

#### Strengths, weaknesses, opportunities and threats

**Table 4** has been used to analyse the potato industry's strengths, weaknesses, opportunities, and threats (SWOT). The SWOT tool assists the industry to build on what works, observe what is lacking, minimise risks, and take the greatest possible advantage of chances for success.

#### **TABLE 4. Potato SWOT analysis**

#### The potato industry

#### **Strengths**

#### **FRESH POTATO**

- Appropriate soils and climate for potato production
- Long growing season due to geographic spread
- National standard for seed certification
- Good quality of potatoes from the majority of producers
- Versatility of potatoes as a consumer product
- Geographic isolation provides a biosecurity barrier
- Geographic location advantageous in servicing Asian markets
- 'Clean and green' image of Australian production in export markets
- Good science capability available to support growers
- Counter-seasonal supply to northern hemisphere
- Access to levies to support research

#### **PROCESSING POTATO**

- A core group of growers who have a willingness and capability to improve yield by adopting the latest technology
- State-of-the-art processing facilities that can compete with the best globally
- Good growing conditions well located relative to processing facilities
- Best practice seed quality certification program
- Access to quality science and research capability
- Global reputation for safe food with integrity in supply chain

#### The potato industry

#### Weaknesses

#### **FRESH POTATO**

- Declining consumption
- Poor image of potatoes and wide health concerns
- Market access restrictions into lucrative northern Asian markets
- Lack of industry cohesion; fragmented between sectors, with low engagement
- No collective industry marketing
- Lack of channels to market for SME producers
- High cost of production and supply chain costs results in poor global competitiveness
- Geographic isolation adds to cost of exports
- Poor application of available research on-farm
- Poor understanding of consumer needs
- Labelling
- Relatively poor marketing and supply chain skills
- Inconsistency of seed quality across all growing regions
- Inconsistency of agronomic advice across all growing regions

#### **PROCESSING POTATO**

- Higher input costs in all categories relative to competing countries
- Lower and more variable yield than competitors
- Lack of economies of scale and capital utilisation
- · Resistance by growers to better position themselves for the developing global realities of the sector
- Inconsistency in the quality of agronomic advice
- Business and whole-of-farm management skills
- Lack of profitability constraining re-investment

#### **Opportunities**

#### **FRESH POTATO**

- Development of new consumer products (e.g. ready-to-eat products)
- Further leverage of 'brand Australia' product integrity in export markets
- Advances in technology
- More targeted application of agronomy skills to suit the three different potato markets: fresh, seed and processed
- Ability to negate perceptions about health fears
- Develop new (non-food) uses to achiever a greater return for waste and by-products
- Standard of seed is internationally recognised
- Increased adoption of research, particularly precision agriculture

#### **PROCESSING POTATO**

- To take advantage of the world's best scientific knowledge in potato agronomy and pests and disease management
- The growing demand for potato products in nearby Southeast Asian markets
- The potential to leverage Australia's horticultural levy system to grow skills

#### The potato industry

#### **Threats**

#### **FRESH POTATO**

- Greater demand for washed product affects dry brushed growers
- Increased frozen imports
- Biosecurity risks
- Availability of skilled researchers
- Lack of extension specialists
- Shortage of skilled labour
- Pressure on water and irrigation
- Shortages of suitable land for potatoes
- Disease incursions
- Poor biosecurity communication affects exports/markets

#### PROCESSING POTATO

- Biosecurity incursion, especially psyllids
- Global oversupply, potential Australian production compromised by cheaper global supply
- Appreciation of the Australian dollar which will drive imports
- Decreased consumption due to greater awareness of health risks



#### **APPENDIX 3: People consulted**

The following people are acknowledged for their contribution to the potato SIP development process.

NAME	INDUSTRY ROLE	REGION
Frank Mitolo	Grower	South Australia
Sue Edwards	Grower	South Australia
Renee Pye	Grower; Director, AUSVEG	South Australia
Pennie Patane	Grower; Director, AUSVEG; SIAP member	Western Australia
David Addison	Grower	Tasmania
David Blackshaw	Grower	Victoria
Kerri-Ann Lamb	Grower	Queensland
Sharron Windolf	Grower; Director, Growcom	Queensland
Daryl Lohrey	Grower, SIAP member	Tasmania
Matthew Ryan	Grower	Tasmania
Geoff Moar	Grower; Director, AUSVEG	New South Wales
Michael Ratcliff	Grower; Director, AUSVEG	Tasmania
Tim Heysen	Grower; SIAP member	South Australia
Ben Dowling	Consultant; SIAP member	South Australia
John Creswell	Grower; SIAP member	Tasmania
lan Simpson	Grower; SIAP member	South Australia
Michael Rettke	Researcher; SIAP member	South Australia
Kathy Ophelkeller	Researcher; SIAP member	South Australia
Mark Geraghty	Independent Chair, Potatoes Australia	South Australia
Allan Smith	Processor; Chair, Potato Processing Association of Australia	New South Wales
Callum Fletcher	AUSVEG; SIAP member	Victoria
Anne Ramsay	Executive Officer, Potato Processing Association of Australia; SIAP member	Victoria
Josh Opas	Processor; Deputy Chair, Potato Processing Association of Australia; SIAP member	Victoria
Jo Tubb	Processor; SIAP member	Tasmania
Les Murdoch	Processor	Tasmania
Brett Pemberton	Processor; SIAP member	New South Wales
Daniel Grayling	Processor	Victoria
Louw Lourens	Processor	Victoria
Tony Gietzel	Processor	Queensland
Michael Hicks	Processor	Victoria

#### **APPENDIX 4: Reference material**

#### **Footnotes**

1. Frilay J., Weragoda A., Litchfield F, Thompson T & Ashton D (2019). *Australian vegetable-growing farms: an economic survey,* 2017–18 and 2018–19, ABARES research report 19.12, Canberra, November. CC BY 4.0

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#### **APPENDIX 5: List of acronyms**

AFPA Australian Fresh Produce Alliance

AIP Annual Investment Plan

**APVMA** Australian Pesticides and Veterinary Medicines Authority

**BMP** best management practice

**CSIRO** Commonwealth Scientific and Industrial Research Organisation

**FY** financial year **GI** glycemic index

**IPDM** integrated pest and disease management

**IRB** Industry Representative Body

**KASA** knowledge, attitudes, skills and aspirations

KPI key performance indicatorM&E monitoring and evaluationMRL Maximum Residue Limit

NHRN National Horticulture Research Network

PHA Plant Health Australia

**PPAA** Potato Processing Association of Australia

**R&D** research and development

RDC Research and Development Corporation

RD&E research, development and extension

**SARDI** South Australian Research and Development Institute

SARP Strategic Agrichemical Review Process
SIAP Strategic Investment Advisory Panel

SIP Strategic Investment Plan
SME small to medium enterprise

**SWOT** strengths, weaknesses, opportunities and threats

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