

Lychee

Strategic Investment Plan

2022-2026



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EXECUTIVE SUMMARY

The overarching strategic intent of this Strategic Investment Plan (SIP) is to develop export markets, increase demand in the domestic market and sustainably improve pest and disease management through innovation in research and development (R&D) and adoption of best management practices (BMPs).

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

The Australian lychee industry situation in 2019/20 is described on **page 4** with further information provided in **Appendix 1**. The industry grew between 2013-2016 but has remained consistent since with similar growth anticipated for the next five years. The value of the industry in this same period grew significantly due to both growth in domestic and export market value. The majority of lychee production occurs in Atherton, Rockhampton, Bundaberg and Sunshine Coast in Queensland.

The strategic intent of the lychee SIP provides a summary of how the lychee industry will drive change over the life of the SIP, which will ultimately allow growers to have access to the tools required to manage pests and disease, increase their productivity and meet the demands of domestic and international consumers.

The financial estimates give an indicative overview of the funding availability for the period of FY2022-FY2026.

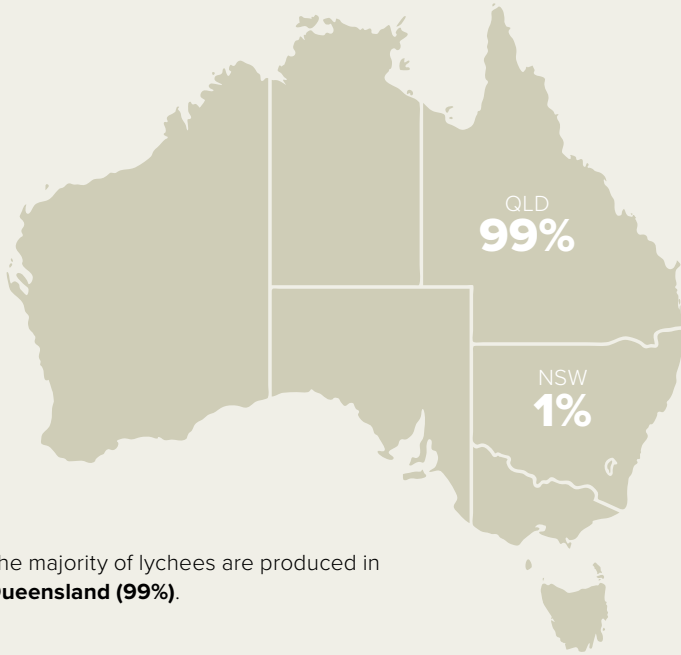
Currently the lychee R&D fund has capacity to invest in new projects from FY2022 and careful prioritisation of future investment needs is required over the next five years.

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 Australian lychee industry. Demand continues to be a focus for the industry, in particular, developing export markets to maintain supply to the domestic market and ensure greater profitability into the future. Under the outcome of productivity, managing pests and diseases is the highest priority area, with extension and communications of information, BMPs and new information, particularly relating to the highest priority areas, being key to the industry's success. Access to protectants continues to be a priority.

The key performance indicators (KPIs) detail how the impact of each strategy will be measured, for example, growth in export markets resulting in higher share of production going to northern hemisphere markets, new information on the management of pests and diseases reducing crop losses, and tools for growers being made available to support access to and adoption of BMPs.

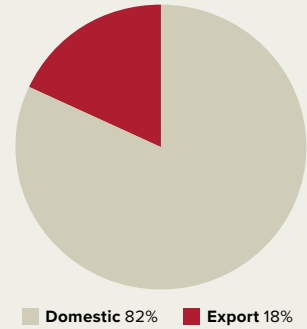


PRODUCTION REGIONS:

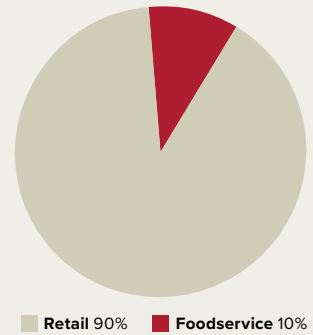


The majority of lychees are produced in Queensland (99%).

EXPORT/DOMESTIC:



DOMESTIC RETAIL VS FOODSERVICE:



PRODUCTION WINDOW:



Oct-Mar

NUMBER OF GROWERS:



Approx. **250**

PER CAPITA CONSUMPTION:



0.78 kg

in 2019/20

PRODUCTION VOLUMES:



2,434 tonnes

in 2019/20

FARMGATE VALUE OF PRODUCT:



\$31.9 million

in 2019/20

GROWTH TRENDS:



SINCE 2012/13...

VOLUME +4.7%

average annual growth



Production volumes of lychees have increased at an **average annual growth rate of 4.7%** over the past 7 years since 2012/13

THE LYCHEE STRATEGIC INVESTMENT PLAN

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

Hort Innovation has led the process for preparing the refresh of the lychee 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 SIP, as well as environmental scanning to identify emergent trends and issues that could impact on future industry profitability and sustainability.

Hort Innovation has valued the support, advice, time, and commitment of all stakeholders who contributed to producing this SIP, especially lychee 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 lychee 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 lychee Annual Investment Plan (AIP). The AIP 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 AIP has been published via established communication channels each year. The AIP will be developed with input from the lychee Strategic Investment Advisory Panel (SIAP), IRBs and other key stakeholders.

Producers in the lychee 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 lychees 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 fresh lychees is set at 5.5 cents per kilogram and 1 cent per kilogram for processing fruit. The marketing levy on fresh lychees is set at 2.5 cents per kilogram.

Hort Innovation has developed this SIP for the lychee industry to strategically invest the collected lychee levy funds into the priority areas identified and agreed by the lychee industry.

This SIP represents the Australian lychee industry's collective view of its R&D and marketing needs over the next five years (2022-2026). Learning, achievements and analysis of the previous SIP, consultation with Australian lychee 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 and marketing 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 AIP each year.

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

	2022 \$	2023 \$	2024 \$	2025 \$	2026 \$
R&D					
Balance end FY2021	177,629				
Estimated levy funds (growers)	110,000	110,000	105,000	105,000	105,000
Australian Government contribution	157,343	158,683	153,555	153,555	99,767
Current investments	125,000	152,300	63,500	63,500	41,200
New investments	145,000	120,000	200,000	200,000	130,000
Total project investments	270,000	272,300	263,500	263,500	171,200
CCR	44,685	45,066	43,610	43,610	28,334
Projected end balance	102,700	62,500	27,000	12,000	7,000
MARKETING					
Balance end FY2021	(2,915)				
Estimated levy funds (growers)	45,000	45,000	45,000	45,000	45,000
Current investments	32,000	–	–	–	–
New investments	–	25,000	30,000	30,000	30,000
Total project investments	32,000	25,000	30,000	30,000	30,000
CCR	7,851	6,133	7,360	7,360	7,360
Projected end balance	2,160	9,400	11,600	13,970	16,340

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

LYCHEE INDUSTRY OUTCOMES



The overarching strategic intent of this SIP is to develop export markets, increase demand in the domestic market and sustainably improve pest and disease management through innovation in R&D and adoption of BMPs.

Industry outcomes

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

OUTCOME 1: Demand creation

Contribute to improving consumer knowledge, attitudes, and purchase intent to drive volume growth.

Demand creation will support the industry to develop existing and future domestic and international markets. This will contribute to improved consumer knowledge and attitudes, in addition to encouraging purchase intent to drive category volume growth.

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

- Broaden consumer awareness so that Australian lychees are top of mind and purchased more frequently
- Develop strong relationships across the supply chain with a shared goal to grow the category
- Identify and prioritise export and domestic market niches where there is demand and growth potential for competitive supply
- Support product positioning with consistent quality, evidence of beneficial product nutrition attributes and responsible industry production practices.

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:

- Improvement of pest and disease management through innovation in R&D
- Continued focus on market access and trade development
- Enhancing crop pollination and resilience through improved pollination security
- 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: Extension and capability

Building capability and innovative culture.

Building capability and an innovative culture will support to use 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 manage the knowledge, relationships, systems and processes required to communicate effectively with internal and external stakeholders. Achieving the outcome will involve:

- A change/progression in awareness, knowledge and attitudes for grower profitability and sustainability which support the adoption of best practice and innovations
- Growers, supply chain, media and governments being well informed on industry initiatives and achievements as a vital part of regional communities and networks
- Proactive strategic and evidence-based decision-making in businesses and for industry on investment, priorities and risk management.

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; 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, production statistics and forecasting to enable better decision-making process by industry and individual businesses.

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





LYCHEE 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 adequate or sufficient resources. Further resources and efficiencies may become available through alternative funding sources such as Hort Frontiers strategic partnership initiative, external grants and/or cross-industry initiatives.

OUTCOME 1: Demand creation

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

STRATEGIES	POTENTIAL BENEFIT OR IMPACT
1. Increase domestic consumer demand for fresh, quality Australian lychees through improving knowledge, attitudes and purchase intent	<ul style="list-style-type: none"> Increased consumer demand for Australian lychees
2. Develop strong counter-seasonal trade to prioritised northern hemisphere markets	<ul style="list-style-type: none"> Continued supply and increased demand for Australian lychee in export markets
3. Improve market access to export markets in accordance with the lychee export strategy	<ul style="list-style-type: none"> Improved market access
4. Collaborate with other industries to establish in-market representation to support export growth	<ul style="list-style-type: none"> Deeper relationships across export supply chains

OUTCOME 2: Industry supply, productivity and sustainability

The Australian lychee industry has increased profitability, efficiency and sustainability through adoption of innovative R&D and sustainable pest and disease management.

STRATEGIES	POTENTIAL BENEFIT OR IMPACT
1. Develop and optimise fit-for-purpose pest and disease management strategies	<ul style="list-style-type: none"> Crop loss reduced by sustainable pest and disease practices Satisfying the phytosanitary requirements for access to key export markets
2. Improve industry preparedness and resilience to biosecurity threats	<ul style="list-style-type: none"> Reduced impact of exotic and endemic plant pests Reduced impact in the event of an incursion
3. Enhance crop pollination and resilience through improved pollination security and management	<ul style="list-style-type: none"> Access to honey bees for pollination is maintained Pollination is improved through increased understanding of the role of honey bees as pollinators
4. Prioritise the major crop protection gaps through a Strategic Agrichemical Review Process (SARP)*	<ul style="list-style-type: none"> Available registered or permitted pesticides are evaluated for overall suitability against major disease, insect pests and weed threats. The SARP aims to identify potential future solutions where tools are unavailable or unsuitable

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OUTCOME 2: Industry supply, productivity and sustainability

The Australian lychee industry has increased profitability, efficiency and sustainability through adoption of innovative R&D and sustainable pest and disease management.

STRATEGIES	POTENTIAL BENEFIT OR IMPACT
5. Support and co-ordinate crop protection regulatory activities with the potential to impact plant protection product access, both in Australia and internationally*	<ul style="list-style-type: none"> Regulatory Risk Assessments have informed proactive strategic priority setting to avoid pest management gaps in the event access or use is negatively impacted
6. 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*	<ul style="list-style-type: none"> Crop protection solutions meet industry priority needs as identified in the industry SARP or biosecurity plan

OUTCOME 3: Extension and capability

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

STRATEGIES	POTENTIAL BENEFIT OR IMPACT
1. Deliver communication and extension capability to create positive change in the areas of sustainable pest and disease management, export and trade development, and demand creation	<ul style="list-style-type: none"> A change in KASA for grower profitability and sustainability which support the adoption of best practice and innovations (e.g., optimise cool/wet chain integrity to point of sale) and export growth
2. Increased participation in industry leadership initiatives	<ul style="list-style-type: none"> Proactive strategic and evidence-based decision-making in businesses and for industry

OUTCOME 4: Business insights

The Australian lychee industry is more profitable through informed decision-making using consumer knowledge and tracking, trade data, production statistics and forecasting and independent reviews.

STRATEGIES	POTENTIAL BENEFIT OR IMPACT
1. Increase industry alignment with quality and brand-positioning opportunities driven by consumer insights*	<ul style="list-style-type: none"> Consumer insights, research that informs marketing strategies and activities
2. Use trade data including market insights to guide ongoing export development opportunities*	<ul style="list-style-type: none"> Increased knowledge of potential markets Positioning of strategic markets
3. Use production forecasts to support market planning in domestic and export markets (e.g., counter-seasonal)	<ul style="list-style-type: none"> Optimised industry resource allocation towards profitable markets

* 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.



LYCHEE SIP MONITORING AND EVALUATION

The Lychee 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.

Lychee SIP Monitoring and Evaluation Framework

The lychee 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.

OUTCOME	STRATEGIES	KPIs
Demand creation		
Outcome 1: Demand creation supports the Australian lychee industry to develop existing and future domestic and international markets.	1. Increase domestic consumer demand for fresh, quality Australian lychees through improving knowledge, attitudes and purchase intent	<ul style="list-style-type: none"> Positive influence on consumer preference, knowledge, attitudes, and purchase intent Utilisation of nutrition information to support consumer demand
	2. Develop strong counter-seasonal trade to priority northern hemisphere markets	<ul style="list-style-type: none"> Growth in export market share of production in northern hemisphere markets
	3. Improve market access to export markets in accordance with the lychee export strategy	<ul style="list-style-type: none"> Growth in export market share of production Development of an export strategy for new markets
	4. Collaborate with other industries to establish in-market representation to support export growth	<ul style="list-style-type: none"> Increased awareness, skills and relationships developed



OUTCOME	STRATEGIES	KPIs
Industry supply, productivity and sustainability		
Outcome 2: The Australian lychee industry has increased profitability, efficiency and sustainability through innovative R&D and sustainable pest and disease management.	1. Develop and optimise fit-for-purpose pest and disease management strategies	<ul style="list-style-type: none"> Development of pest and disease management strategies that mitigate crop loss in collaboration with growers
	2. Improve industry preparedness and resilience to biosecurity threats	<ul style="list-style-type: none"> Maintenance/tracking of the implementation of an industry biosecurity plan Development of risk analyses of high priority pests including entry pathways, establishment and spread potential
	3. Enhance crop pollination and resilience through improved pollination security and management	<ul style="list-style-type: none"> Contribution to the National Bee Pest Surveillance Program Development of knowledge on the role of honey bees as pollinators of lychee
	4. Prioritise the major crop protection gaps through a SARP*	<ul style="list-style-type: none"> Coordinated industry priority setting with a clear outlook of gaps and risks in existing pest control options Industry priority needs published and shared with stakeholders, including registrants
	5. Support and co-ordinate crop protection regulatory activities with the potential to impact plant protection product access, both in Australia and internationally*	<ul style="list-style-type: none"> Regulatory Risk Assessments maintained
	6. 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*	<ul style="list-style-type: none"> Data to support applications to the APVMA and the establishment of Maximum Residue Limits (MRLs)
Extension and capability		
Outcome 3: Improved capability and an innovative culture in the Australian lychee industry maximises investments in productivity and demand.	1. Deliver communication and extension capability to support positive change in the areas of sustainable pest and disease management, export and trade development and demand creation	<ul style="list-style-type: none"> Establishment of a baseline and then increased share of the industry with positive change in KASA, and practice and implementation concerning targeted high priority areas
	2. Increased participation in industry leadership initiatives	<ul style="list-style-type: none"> Increased participation in industry initiatives



OUTCOME	STRATEGIES	KPIs
Business insights		
Outcome 4: The Australian lychee industry is more profitable through informed decision-making using consumer knowledge and tracking, trade data, production statistics and forecasting and independent reviews.	1. Increase industry alignment with quality and brand-positioning opportunities driven by consumer insights*	<ul style="list-style-type: none"> • Delivery of a consumer insights strategy • Evidence that consumer insights inform market engagement (e.g., case studies) • New consumer knowledge is available for growers
	2. Use trade data including market insights to guide ongoing export development opportunities*	<ul style="list-style-type: none"> • Supply of trade data outputs that meet stakeholders needs
	3. Use production forecasts to support market planning in domestic and export markets (e.g., counter-seasonal)	<ul style="list-style-type: none"> • Production forecast are available • Evidence that production forecasts support marketing and production decisions

* 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 lychee 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. This will involve Hort Innovation’s whole-of-horticulture reporting obligations and corporate plan, 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 more 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 lychee industry include:

- Biosecurity preparedness program
- Integrated Pest and Disease Management (IPDM) practices.

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 demand-driving outcomes across the lifespan of the 2022-2026 SIP 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

Collaboration across the agriculture research community is essential, including with IRBs and 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 and selected institutes. 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 lychee industry investment program, Department of Agriculture and Fisheries, Queensland (DAFQ), was engaged during the development of this SIP to ensure consideration and strategically aligned priorities for the lychee industry. In addition, strategic priorities and opportunities identified by Australian Lychee Growers Association (ALGA) have been considered in the development of the lychee SIP where applicable.

TABLE 2. Government and key agency priorities

ALGA strategic priorities	DAFQ priorities	Rural RD&E for Profit priorities	Australian Government Science and Research priorities
Market access	Inspire talent, investment and ideas to drive industry development	Advanced technology	Food
Postharvest research	Anticipate and respond to the emerging needs of the economy and environment	Biosecurity	Soil and water
Improved agronomy	Support sustainable and responsible industry	Soil, water and managing natural resources	Advanced manufacturing
New lychee varieties		Adoption of R&D	Environmental change
Promotions			Health

This SIP has been developed alongside the government and key agency priorities listed in **Table 2**, with consideration of issues faced by the lychee 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 lychee 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 lychee SIAP, which is 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 SIAP can be found on the Hort Innovation website [here](#), and the AIP will be published on the same page each year.

Investment opportunities through Hort Frontiers

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 to invest in specific impact areas to drive innovation and sustainability initiatives.

The lychee industry views a number of these investment areas as opportunities for success into the future, including:

- International markets
- Advanced production systems
- Leadership.

Partnering with Hort Frontiers on these areas would provide the lychee 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*).

FIGURE 1. Four key pillars of the Australian-grown Horticulture Sustainability Framework



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 examples of lychee SIP strategies that illustrate how the industry is already aligning to the framework.

TABLE 3. Lychee SIP strategy examples showing how the industry is already aligning to the Australian-grown Horticulture Sustainability Framework

STRATEGY	IMPACT	SUSTAINABILITY GOAL
Increase domestic consumer demand for fresh, quality Australian lychees through improving knowledge, attitudes and purchase intent	<ul style="list-style-type: none"> Increased consumer demand for Australian lychees 	Nourish & Nurture
Develop and optimise fit-for-purpose pest and disease management strategies	<ul style="list-style-type: none"> Crop loss reduced by sustainable pest and disease practices Satisfying the phytosanitary requirements for access to key export markets 	Planet & Resources
Improve industry preparedness and resilience to biosecurity threats	<ul style="list-style-type: none"> Reduced impact of exotic and endemic plant pests Reduced impact in the event of an incursion 	Planet & Resources
Enhance crop pollination and resilience through improved pollination security and management	<ul style="list-style-type: none"> Access to honey bees for pollination is maintained Pollination improved through improved understanding of the role of honey bees as pollinators 	Planet & Resources
Develop strong counter-seasonal trade to priority northern hemisphere markets	<ul style="list-style-type: none"> Continued supply and increased demand for Australian lychee in export markets 	People & Enterprise



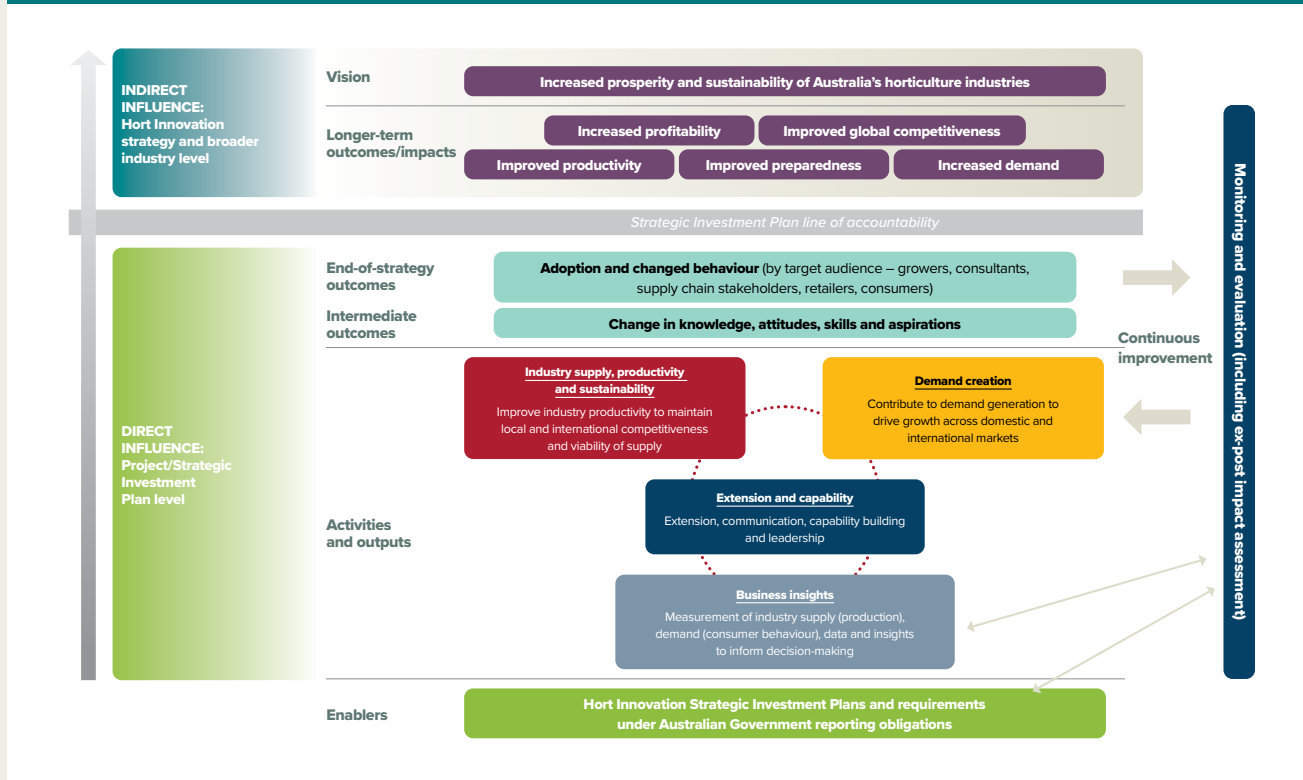
HORT INNOVATION



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.

FIGURE 2. Strategic Investment Plan logic



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 Government funds 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

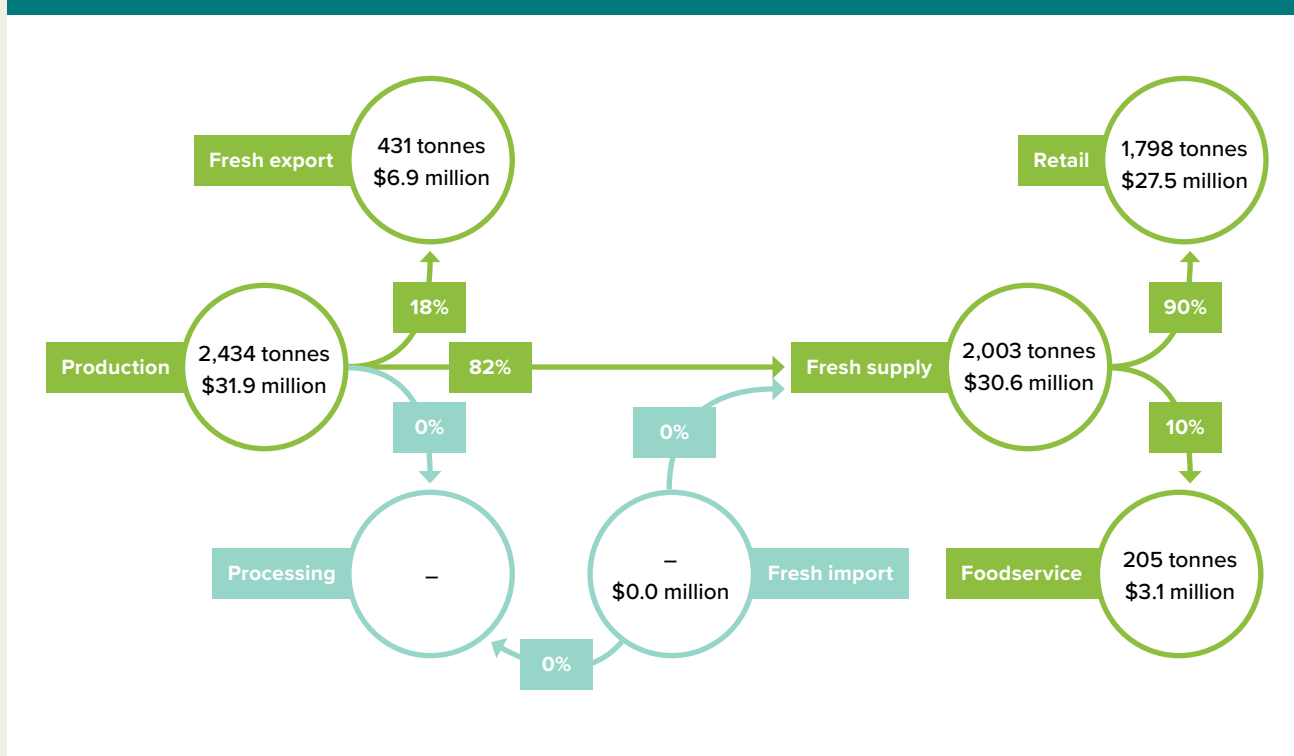
APPENDIX 1: Industry context

Industry supply chain

The Australian lychee industry is focused on a whole-of-supply-chain approach that takes into account production, harvesting, postharvest management and marketing. All Australian lychees are marketed as fresh fruit because the industry uses airfreight and cool chain to provide fresh, best quality lychees to markets.

The Australian lychee industry is unique in having the longest lychee production season in the world. Due to the introduction of earlier- and later-fruited varieties and the extensive production zones from tropical to temperate climate, the industry produces fruit from October in Far North Queensland to early April in northern New South Wales. This gives the Australian industry a significant advantage over other suppliers in the global market, as no other country can offer such a long line of supply of quality-controlled fresh lychee product.

FIGURE 3. Lychee supply chain, 2019/20



Source: Australian Horticulture Statistics Handbook (2019/20)

Lychees are grown exclusively for the fresh market, with none sent for processing. Of these fresh lychees, 18% are exported, which is similar to the average for all fruit. Foodservice is a small market for lychees, making up 10% of fresh supply (**Figure 3**).

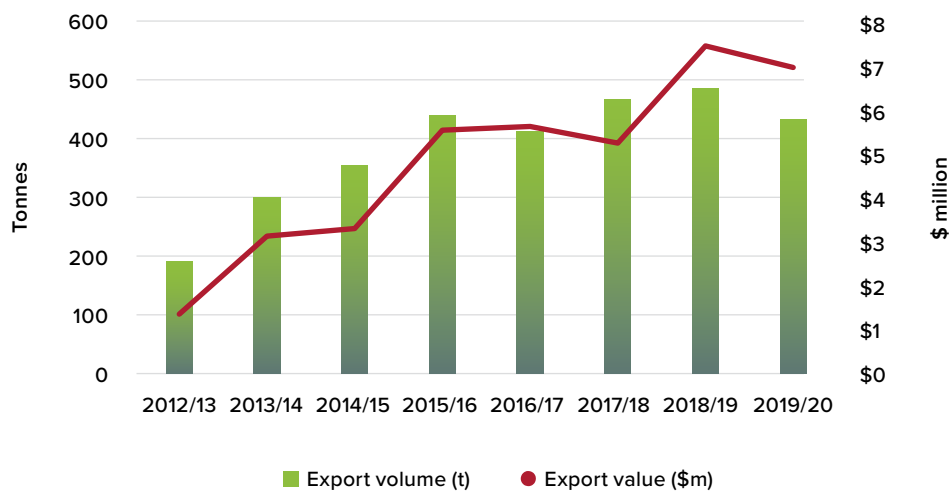


Domestic consumers and drivers of demand

The price of lychees that are sold on the domestic market are affected by supply. The price per kilogram or by a 5-kilogram carton can fluctuate significantly during the lychee season. The higher prices can usually be achieved from the early varieties at the start of the season in Far North Queensland, but once more fruit becomes available then the price will drop. Prices per 5-kilogram carton can vary throughout the season depending on variety, quality and demand. Chinese New Year is another significant factor contributing to price fluctuations. This is due to the significant demand from those with Asian heritage.

Export markets

FIGURE 4. Lychee exports, 2012/13 to 2019/20

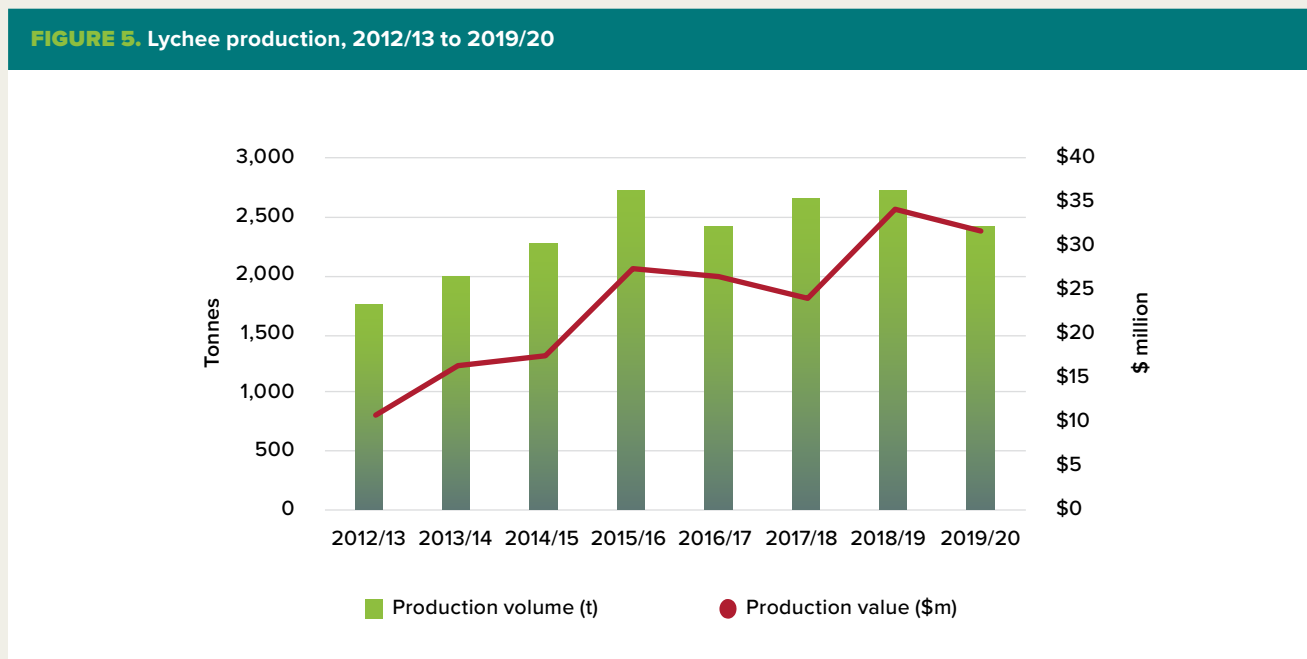


Source: Australian Horticulture Statistics Handbook (2019/20)

Exports of lychees make up 18% of production volume and have been following an upward trend since 2012/13. The peak was reached in 2018/19, reaching 484 tonnes and \$7.4 million, with a slight decline to 2019/20 (Figure 4).



Industry production



Source: Australian Horticulture Statistics Handbook (2019/20)

Like exports, lychee production has been increasing, but at a slower rate since 2012/13. Over the past five years production has remained relatively steady at around 2,500 tonnes. Prices, however, have continued to grow, increasing from a unit price of \$10.30 per kilogram in 2015/16 to \$13.11 in 2019/20. Overall, prices have more than doubled from \$6.03 per kilogram in 2012/13 (Figure 5).

Lychees are produced as a single annual crop with production significantly dependent on rainfall at the right time and cold winters to induce flowering. The harvest period is late October (Far North Queensland) to March (northern New South Wales), which provides the world’s longest production period for lychees.

Lychee production is highly labour intensive especially during harvest time. Lychees must be fully ripe when harvested as they do not continue to ripen after picking. Each variety has different indicators of when the fruit is ripe and ready to harvest. In some varieties, not all fruit on the panicle will ripen at once. Where individual mature fruit needs to be picked early, harvest costs increase.

Although labour is a significant operating cost, the industry is faced with a significant financial impost due to the mechanisms required to prevent loss through bird and bat damage.



APPENDIX 2: Lychee 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. The outcome and ultimate impact of the pandemic are unknown. Investment areas 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 have 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 lychee 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. Lychee SWOT analysis

The lychee industry	
Strengths	<ul style="list-style-type: none"> • Australian lychees retain their freshness by maintaining on-farm and supply chain (cool chain) best management practices • Healthy product profile • Longest production period in the world providing continuity of supply from October to March • Highly engaged consumer base with an opportunity to increase this group and leverage 'desirability' with future markets • Peak availability during festive/entertaining seasons • High demand in both domestic and export markets
Weaknesses	<ul style="list-style-type: none"> • Specific consumer, usage and attitude research is not available – deeper understanding of consumer segments is needed with specific data, such as Asian-Australian communities • Limited data regarding production, pricing and exports • Harvest commencement times may vary to match seasonal conditions (e.g., October/November) leading to short lead times in locking in deployment of activity during a saturated in market time • Short shelf life outside correct packaging, high humidity cool chain and retail display environment • Consistent supply year-on-year with climatic and seasonal conditions impacting export relationships and marketing opportunities
Opportunities	<ul style="list-style-type: none"> • Development of new varieties • Export markets, especially Asian countries around the Lunar New Year, the USA market and other countries with growing middle-class markets • Use of irradiation for disinfestation opens markets which would be otherwise closed • Import of good quality northern hemisphere product to bolster demand in the domestic market off-season • Export consumers regard Australian lychees as superior to the sea-freighted, sulphur dioxide-treated fruit • Focus on positioning fruit in a relevant way to consumers to aid consideration

The lychee industry

Threats

- Seasonal variation can have a significant positive/negative localised impact on production
- Exotic pest outbreak
- Import of poor-quality product affecting domestic market perception
- Increased costs of production
- Seasonal window means the industry competes with other established products during an expensive activation window
- Oversupply on domestic markets can have an impact on grower returns
- A shortage of suitable or available labour could affect some northern growing areas

APPENDIX 3: People consulted

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

NAME	INDUSTRY ROLE	REGION
Jill Houser	Australian Lychee Growers Association; Grower; Lychee SIAP member	Sunshine Coast, QLD
Derek Foley	Australian Lychee Growers Association; Grower; Lychee SIAP member	Bundaberg, QLD
Christopher Salta	Grower; Lychee SIAP member	Mooloolah, QLD
Frank Bosnic	Grower; Lychee SIAP member	Mareeba, QLD
Craig Van Rooyen	Grower; Lychee SIAP member	Bundaberg, QLD
Martin Joyce	Grower; Lychee SIAP member	Mutarnee, QLD
Yan Diczbalis	Researcher; Lychee SIAP member	South Johnstone, QLD
Ian Groves	Australian Lychee Growers Association; Grower	Yeppoon, QLD

APPENDIX 4: Reference material

Australian Lychee Growers Association, 2021, <https://www.australianlychee.com.au/>

Horticulture Innovation Australia Limited, 2012, Lychee Strategic Investment Plan 2012-17

Horticulture Innovation Australia Limited, 2019, Growing into the Future: Strategy 2019-2023

Horticulture Innovation Australia Limited, 2020, Australian Horticulture Statistics Handbook 2020/21

Horticulture Innovation Australia Limited, 2021, Australian-grown Horticulture Sustainability Framework



APPENDIX 5: List of acronyms

AIP	Annual Investment Plan
APVMA	Australian Pesticides and Veterinary Medicines Authority
BMP	best management practice
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DAFQ	Department of Agriculture and Fisheries, Queensland
FY	financial year
IRB	Industry Representative Body
KASA	knowledge, attitudes, skills and aspirations
KPI	key performance indicator
M&E	monitoring and evaluation
MRL	Maximum Residue Limit
NHRN	National Horticulture Research Network
R&D	research and development
RDC	Research and Development Corporation
RD&E	research, development and extension
SARP	Strategic Agrichemical Review Process
SIAP	Strategic Investment Advisory Panel
SIP	Strategic Investment Plan
SWOT	strengths, weaknesses, opportunities, and threats



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