Banana

Strategic Investment Plan

2022-2026

Hort Innovation
Strategic levy investment

BANANA FUND

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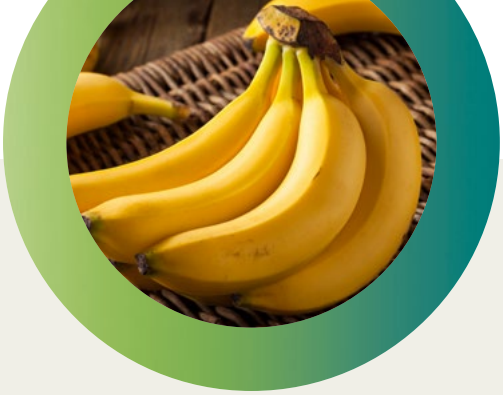


EXECUTIVE SUMMARY

The overarching strategic intent of this Strategic Investment Plan (SIP) is to optimise profitability and sustainability of the Australian banana industry through innovation in pest resistance, technology, adoption of best management practices (BMPs) and by increasing demand in the domestic market.

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

The Australian banana industry situation in 2019/20 is described on ***page 4*** with further information provided in ***Appendix 1***. Banana production in terms of both value and volume has been steady over the past seven years, indicating that the industry is in a mature state. 2018/19 and 2019/20 have both been strong production years, with industry value around $600 million. The major producing areas include Tully and Innisfail, Lakeland, and the Atherton Tablelands in Queensland; Darwin in the Northern Territory; the Coffs Harbor and Northern Rivers regions of New South Wales; and the Carnarvon region in Western Australia.

The strategic intent of the banana SIP outlines how the banana industry will drive change over the next five years, which will ultimately come about by growers having access to optimal pest, disease and biosecurity management tools and resources to maintain their plant protection, improve BMPs and meet the demands of Australian consumers.

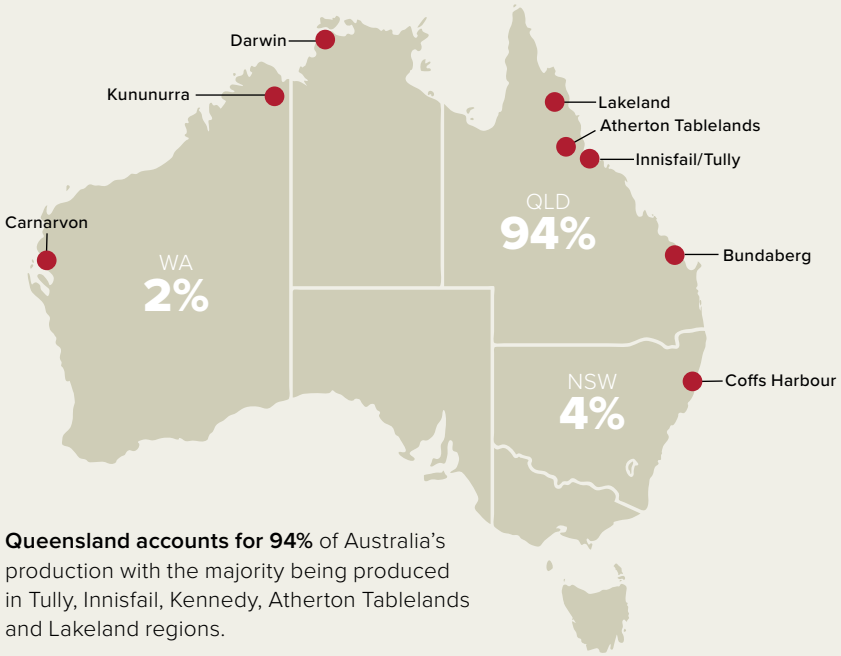
The financial estimates give an indicative overview of the funding availability for the period of FY2022-FY2026.

Currently the banana research and development (R&D) fund has capacity to invest over the life of the SIP. Careful prioritisation of 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 banana industry. Evaluation of new disease-resistant varieties and adoption of BMPs, specifically for the effective management of biosecurity, and pest and disease threats remains the industry's highest priorities and is the key focus of the banana R&D investment program over the next five years. Under the outcome of demand creation, improving awareness, consideration and purchase intent is a core focus of the category marketing program. The marketing program will continue to drive relevant and distinguishable campaigns. Extension and communication of information, particularly relating to these priority areas, is key to the industry's success.

The key performance indicators (KPIs) detail how the impact of each strategy will be measured, for example, availability of disease-resistant varieties, new knowledge on new disease-resistance varieties and BMPs, tools and technical support for adoption of on-farm biosecurity protocols, and positive influence on consumer preference and consideration for Australian bananas.

PRODUCTION AREAS:



Queensland accounts for 94% of Australia's production with the majority being produced in Tully, Innisfail, Kennedy, Atherton Tablelands and Lakeland regions.

PRODUCTION WINDOW:

Year-round

CONSUMPTION:

95%

of Australian households purchase Australian bananas

PER CAPITA CONSUMPTION:

14.75 kg

in 2019/20

PRODUCTION VOLUMES:

381,676 tonnes

in 2019/20

FARMGATE VALUE OF PRODUCT:

$596.2 million

in 2019/20

NUMBER OF GROWERS:

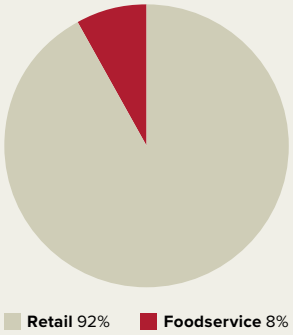
540

FRESH/PROCESSING:

100%

FRESH

DOMESTIC RETAIL VS FOODSERVICE:



VARIETIES:

Cavendish 97%

Lady Finger 3%

Other (red, Ducasse, plantains) <1%

The **Cavendish** variety accounts for approximately **97%** of production, followed by the **Lady Finger** variety (**3%**). Other varieties (e.g., r**ed, Ducasse, plantains**) account for the balance of production.

THE BANANA STRATEGIC INVESTMENT PLAN

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

Hort Innovation has led the process for preparing the refresh of the banana 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 has 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 industry profitability and sustainability.

Hort Innovation has valued the support, advice, time, and commitment of all stakeholders that contributed to producing this SIP, especially banana 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 banana 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 banana 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 banana Strategic Investment Advisory Panel (SIAP), IRBs and other key stakeholders.

Banana producers 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 bananas that are produced in Australia and either sold by the producer or used by the producer in the production of other goods. The levy rate on banana research and development (R&D) is set at 0.54 cents per kilogram. The marketing levy is set at 1.15 cents per kilogram.

Hort Innovation manages the banana levy funds proportion directed to R&D and marketing, while separately Plant Health Australia (PHA) manages plant health programs (0.5 cents per kilogram).

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

This SIP represents the Australian banana 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 banana 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 indicative financial estimates used for the purposes of developing this SIP are presented in ***Table 1*** below. These figures are regularly reviewed to reflect the latest information and statistics for the industry and any changes in investment priority. For further details refer to the banana AIP.

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

	2022 $	2023 $	2024 $	2025 $	2026 $
R&D					
Balance end FY2021	**1,284,003**				
Estimated levy funds (growers)	2,100,000	2,000,000	2,000,000	2,000,000	2,000,000
Australian Government contribution	2,852,638	2,797,190	2,052,523	1,678,383	1,196,961
Current investments	4,775,000	2,878,300	2,279,600	1,727,100	187,500
New investments	200,000	2,000,000	1,300,000	1,200,000	1,900,000
Total project investments	4,975,000	4,878,300	3,579,600	2,927,100	2,087,500
CCR	730,275	716,081	525,446	429,666	306,422
Projected end balance	669,000	101,100	84,000	116,500	75,100
MARKETING					
Balance end FY2021	**1,047,689**				
Estimated levy funds (growers)	4,600,000	4,650,000	4,650,000	4,650,000	4,650,000
Current investments	3,900,000	–	–	–	–
New investments	–	3,600,000	3,700,000	3,500,000	3,700,000
Total project investments	3,900,000	3,600,000	3,700,000	3,500,000	3,700,000
CCR	672,098	620,399	637,632	603,165	637,632
Projected end balance	1,116,700	1,529,900	1,843,900	2,357,900	2,671,900

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

BANANA INDUSTRY OUTCOMES

The overarching strategic intent of this SIP is to optimise profitability and sustainability of the Australian banana industry through innovation in pest resistance, technology, adoption of BMPs and by increasing demand in the domestic market.

Industry outcomes

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

OUTCOME 1: Industry supply, productivity and sustainability
Improve industry productivity (inputs/outputs) to maintain competitiveness and viability of supply.

Supply and productivity will be supported through improvements to production efficiencies, which 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:

- Development and evaluation of new disease resistant varieties, with a focus on Panama disease tropical race 4 (Panama TR4)
- Ensuring access to superior cultivars for efficient production that meet consumer quality expectations
- Development of strategies and activities for biosecurity, environment and sustainability to assist in the adoption of new practices on banana farms
- 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 2: Demand creation
Increase consumer demand in domestic markets to support farmgate grower returns.

Demand creation will support industry to maintain existing markets and expand into new market opportunities. This will contribute to improved consumer knowledge and attitudes, in addition to encouraging purchase intent to drive 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 the domestic market. It means the industry is investing to:

- Broaden consumer awareness of the 'Australian Bananas' brand and product attributes, including the amplification of health attributes, so that bananas are more top of mind and purchased more frequently
- Build a strong brand in 'Australian Bananas' by improving awareness, consideration, attitudes and knowledge
- Support product positioning with consistent quality, evidence of beneficial product health attributes and responsible industry production practices
- Identify and prioritise opportunities for new product development or product diversification/value-adding through in-depth consumer research and market analysis
- Develop strong relationships across the supply chain with a shared goal to grow the category.

OUTCOME 3: Extension and capability
Building capability and innovative culture.

Building capability and an innovative culture will support industry to use 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 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 outcomes that will build a stronger, more resilient industry, in addition to improved domestic and international networks, and cross-industry collaboration
- 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 supply, productivity and sustainability; demand creation; and extension and capability.

Achieving the outcome will involve reliable baseline data and analysis to provide insights and understanding of 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.

BANANA INDUSTRY STRATEGIES

Strategies to address industry investment priorities

The tables below describe the strategies and identified impacts for each of the four key outcome areas. 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 (0-3 years), medium (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: Industry supply, productivity and sustainability
The Australian banana industry has increased profitability, efficiency and sustainability through innovative R&D, sustainable BMPs and varieties.

STRATEGIES	POTENTIAL BENEFIT OR IMPACT
1. Develop and evaluate new disease-resistant varieties, with a focus on Panama TR4, while maintaining or enhancing consumer and product quality attributes	• Mitigation of risk of Panama TR4 on industry productivity and profitability • Development of disease-resistant varieties
2. Develop agronomic practices to improve productivity, quality and environmental outcomes, including automation options and innovative and world-leading industry management practices	• Automation that reduces labour inputs, and mitigation of challenging climatic conditions • Identification of labour challenges and costs to inform innovation and decision-making
3. Improve industry preparedness and resilience to biosecurity threats through better on-farm biosecurity practices, increased surveillance and improved diagnostics	• Enhanced industry biosecurity preparedness • Improved management and eradication strategies
4. Develop and optimise fit-for-purpose pest and disease management strategies	• Development of pest and disease strategies that mitigate crop loss • Preparedness for emerging pests and diseases • Transition to systems approach for pest and disease management
5. Prioritise the major crop protection gaps through a Strategic Agrichemical Review Process (SARP)*	• 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
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 2: Demand creation
Demand creation supports the Australian banana industry to expand into existing and future markets.

STRATEGIES	POTENTIAL BENEFIT OR IMPACT
1. Increase domestic consumer demand for Australian bananas through improving knowledge, attitudes and purchase intent	• Increased consumer demand for Australian bananas • Increased awareness of health benefits of Australian bananas and maintained association with the well-established 'energy' occasion

OUTCOME 3: Extension and capability
Improved capability and an innovative culture in the Australian banana industry maximises investments in productivity and demand.

STRATEGIES	POTENTIAL BENEFIT OR IMPACT
1. Provide opportunity for engagement between industry, and across industry and other stakeholders regionally, nationally, and internationally to innovate	• Strengthened local-to-international networks in the banana industry, to build business relationships, create opportunities and share information to develop an innovative culture
2. Deliver communication and extension capability to create positive change in the areas of biosecurity, environmentally sustainable production, pest and disease management and soil health	• Support of strong international research, development and extension (RD&E) networks and high levels of collaboration to produce more efficient and effective RD&E
3. Strengthen industry leadership through initiatives and training	• Proactive strategic and evidence-based decision-making in businesses and for industry on investment, priorities and risk management

OUTCOME 4: Business insights
The Australian banana industry is more profitable through informed decision-making using consumer knowledge and tracking, production statistics and independent reviews.

STRATEGIES	POTENTIAL BENEFIT OR IMPACT
1. Increase industry alignment with quality and brand-positioning opportunities such as new product development, quality, or product diversification/ value-adding driven by consumer insights*	• Provision of business insights to deliver against demand, supply and extension outcomes • Delivery of a consumer insights strategy • Evidence that consumer insights inform strategic market engagement (e.g., case studies)
2. Use production forecasts to inform long-term and/or in-season market planning and supply strategies	• Increased industry or other stakeholder capacity to make informed business decisions through effective engagement and communication of production forecasts

** 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.*

BANANA SIP MONITORING AND EVALUATION

The banana 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.

Banana SIP Monitoring and Evaluation Framework

The banana SIP M&E Framework is shown on page 12. 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
Industry supply, productivity and sustainability		
Outcome 1: The Australian banana industry has increased profitability, efficiency and sustainability through innovative R&D, sustainable BMPs and varieties.	1. Develop and evaluate new disease-resistant varieties, with a focus on Panama TR4, while maintaining or enhancing consumer and product quality attributes	• Improved knowledge and availability of commercialised varieties that are resistant to Panama TR4 for grower adoption or trialling • New knowledge available to growers on the performance and product quality attributes of new varieties resistant to Panama TR4
	2. Develop agronomic practices to improve productivity, quality and environmental outcomes, including automation options and innovative and world-leading industry management practices	• Improved knowledge of quality, productivity and environmental practices for banana growers • Automation projects are initiated, and automation technologies are in development
	3. Improve industry preparedness and resilience to biosecurity threats through better on-farm biosecurity practices, increased surveillance and improved diagnostics	• Maintenance/tracking of the implementation of an industry biosecurity plan
	4. Develop and optimise fit-for-purpose pest and disease management strategies	• Development of pest and disease management strategies that mitigate crop loss in collaboration with growers
	5. Prioritise the major crop protection gaps through a SARP*	• 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
	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 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)
Demand creation		
Outcome 2: Demand creation supports the Australian banana industry to expand into existing and future markets.	1. Increase domestic consumer demand for Australian bananas through improving knowledge, attitudes and purchase intent	• Positive influence on attitudes such as consumer preference, consideration, awareness and purchase intent • Use of nutritional information to support consumer demand

OUTCOME	STRATEGIES	KPIs
Extension and capability		
Outcome 3: Improved capability and an innovative culture in the Australian banana industry maximises investments in productivity and demand.	1. Provide opportunity for engagement between industry, and across industry and other stakeholders regionally, nationally, and internationally to innovate	• Establishment of a baseline and then increased share of industry hectares with positive change in knowledge, attitudes, skills and aspirations (KASA) and practice concerning targeted high priority areas • Establishment of a baseline and then increased share of industry hectares) that are implementing targeted high-priority areas (e.g., varieties resistant to Panama TR4, biosecurity measures)
	2. Deliver communication and extension capability to create positive change in the areas of biosecurity, environmentally sustainable production, pest and disease management and soil health	• Demonstrated growth in local-to-global cooperation within industry and across industries leading to business and industry innovations and adoption of improved practices
	3. Strengthen industry leadership through initiatives and training	• Increased participation in industry leadership initiatives
Business insights		
Outcome 4: The Australian banana industry is more profitable through informed decision-making using consumer knowledge and tracking, production statistics and independent reviews.	1. Increase industry alignment with quality and brand-positioning opportunities, such as new product development, quality, or product diversification/value-adding driven by consumer insights*	• Delivery of consumer insights strategy • Evidence that consumer insights inform market engagement (e.g., case studies) • New consumer knowledge available for growers
	2. Use production forecasts and benchmarking to inform long-term and/or in-season market planning and supply strategies	• Availability of production forecasts • Evidence that production forecasts support marketing and production decisions • Evidence that benchmarking supports 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 banana 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 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 banana industry include:

- Standard benchmarking best practice guide for implementation across industries
- Quality monitoring and capacity-building across the supply chain
- Waste management
- Technology and automation
- Plant propagation
- Leadership.

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 across the lifespan of the banana 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.

Strategic science and research focus

The banana SIP takes into consideration the research priorities of various industry stakeholders, including Australian Banana Growers' Council (ABGC) and Australian Fresh Produce Alliance (AFPA), and acknowledges the representation of these organisations. In developing the strategies presented within the banana SIP, ***Table 2*** lists the strategic research areas that were considered.

TABLE 2. Banana research priorities

ABGC priorities	AFPA strategic priority areas
Effective leadership	Sustainability (climate change, water, packaging and shelf life)
Industry advocacy and policy	Trade (market access, industry capability development, technical exchange with export markets)
Biosecurity	Biosecurity (managing pest and disease, integrated pest management (IPM), chemistry)
Pest and disease management	Food safety (systems and technology)
Supply chain management	Pollination (bees and flies, alternate pollinators, pollination in production systems)
Communication and extension	

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 banana 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 banana 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 3. Government and key agency priorities

DAFQ priorities	Rural RD&E for Profit priorities	Australian Government Science and Research priorities
IDPM	Advanced technology	Food
Labour and mechanisation/ technologies	Biosecurity	Soil and water
Water quality and runoff	Soil, water and managing natural resources	Advanced manufacturing
Support extension, adoption and practice change	Adoption of R&D	Environmental change
		Health

This SIP has been developed alongside the government and key agency priorities listed in ***Table 3***, with consideration of issues faced by the banana 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 banana 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 banana 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 program 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
- 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 banana industry views a number of these investment areas as opportunities for success into the future, including:

- Environmental sustainability (water, soil and climate)
- Biosecurity
- Health, nutrition and food safety
- New crop protection tools
- Advanced production systems
- Novel food and alternate uses (waste reduction)
- International markets
- Leadership.

Partnering with Hort Frontiers on these areas would provide the banana 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 report, aiming to strengthen the horticulture industry's sustainability to meet the changing expectations and needs of growers, consumers, the community, investors and governments. The report applies across the whole of Australian horticulture, including fruits, vegetables, nuts and nursery stock. 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 4 provides examples of banana SIP strategies showing how the industry is already aligning to the framework.

TABLE 4. Banana SIP strategy examples showing how the industry is already aligning to the Australian-grown Horticulture Sustainability Framework

STRATEGY	POTENTIAL BENEFIT OR IMPACT	SUSTAINABILITY GOAL
Develop agronomic practices to improve productivity, quality and environmental outcomes, including automation options and innovative and world-leading industry management practices	• Automation that reduces labour inputs, and mitigation of challenging climatic conditions • Identification of labour challenges and costs to inform innovation and decision-making	Planet & Resources
Improve industry preparedness and resilience to biosecurity threats through better on-farm biosecurity practices, increased surveillance and improved diagnostics	• Enhanced industry biosecurity preparedness • Improved management and eradication strategies	Planet & Resources
Increase domestic consumer demand for Australian bananas through improving knowledge, attitudes and purchase intent	• Increased consumer demand for Australian bananas • Increased awareness of health benefits of Australian bananas and maintained association with the well-established 'energy' occasion	Nourish & Nurture
Deliver communication and extension capability to create positive change in the areas of biosecurity, environmentally sustainable production, pest and disease management and soil health	• Support of strong international RD&E networks and high levels of collaboration to produce more efficient and effective RD&E	People & Enterprise

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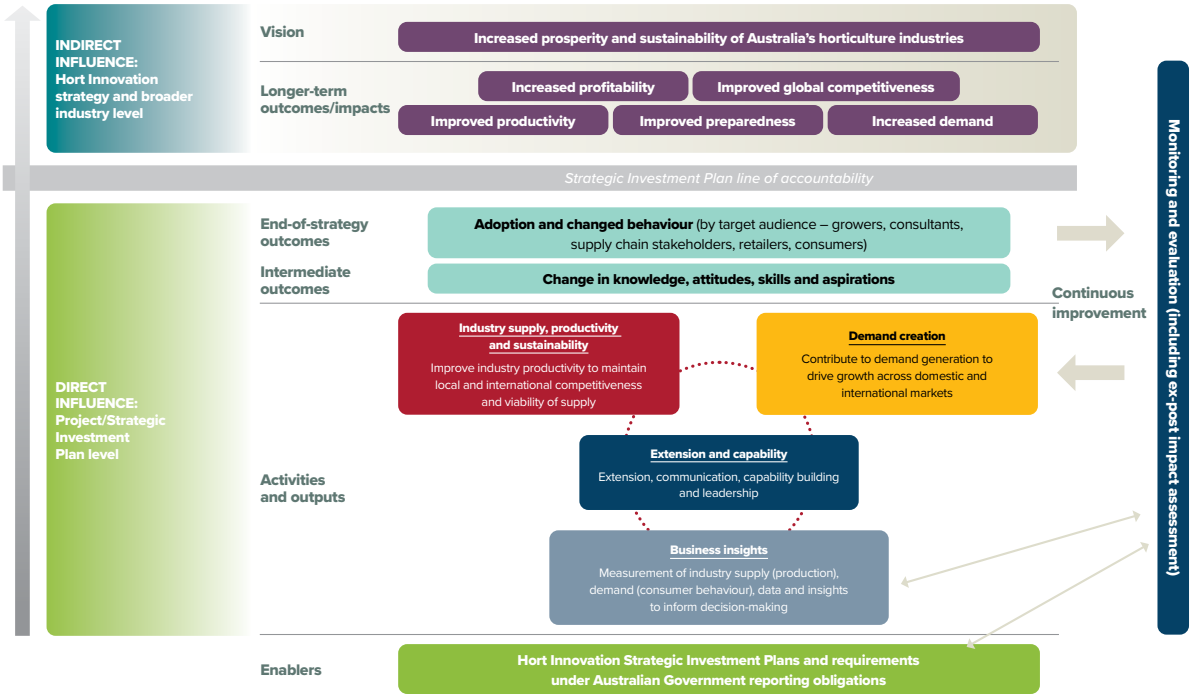
Strategic Investment Plan logic

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



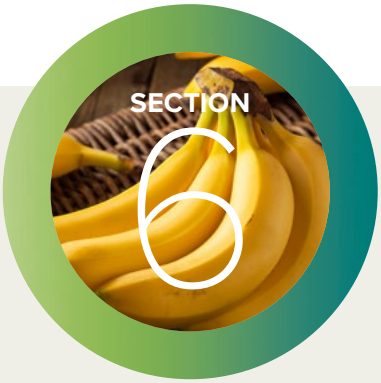
Aligning to Hort Innovation investment priorities

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 an 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

Industry supply chain

Bananas are the number one snacking option for Australians and one of the highest selling supermarket products.

Bananas are delivered hard, green and cool to major retailers around Australia and to wholesale markets in Brisbane, Newcastle, Sydney, Melbourne, Adelaide and Perth.

Soon after Panama TR4 was first detected in Queensland in March 2015, the industry enacted short, medium and long-term management strategies to contain the disease. A major on-farm biosecurity initiative was undertaken with DAFQ and ABGC coordinating and implementing BMP with education of growers. ABGC also purchased the infected farm and destroyed all the host plants to contain the disease – an historical world first.

In the long term, researchers are working to identify disease resistant and tolerant varieties that also appeal to consumers. Although the timeframe is beyond the next five years, our researchers must work with international researchers so that the Australian banana industry can benefit from new discoveries.

The banana industry's current IPDM and biosecurity protocols are essential for dealing with multiple problems, sequentially or simultaneously. Ongoing adoption and refinement to the BMP guides is needed to ensure that the industry has a viable future and that growers can economically produce bananas while complying with biosecurity best practices.

Domestic consumers and drivers of demand

Sales are almost entirely to domestic markets with only limited export sales, often directly exported by growers. Their consumption is almost universal – 92% of Australians eat bananas each year[1] – and bananas are part of the weekly grocery shop.

On a broader level, key consumer trends show that consumers are increasingly:

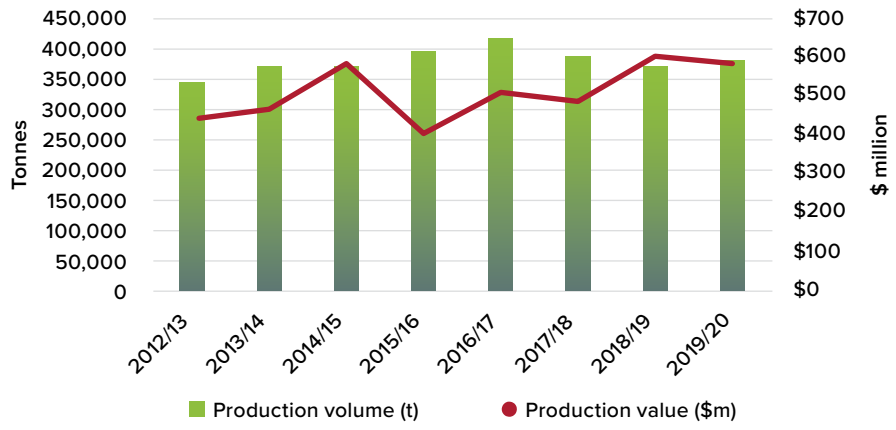
- Looking for relevant nutritional benefits in the food they eat
- Looking for ways to improve overall wellness, energy and vitality
- Snacking more, eating on the go, and choosing healthier food options to snack with
- Seeking more transparency in how their food is produced
- Looking for foods that are convenient to eat and easily accessible.

National banana production and consumption figures have been affected by barriers to purchase, such as reduced supply (e.g., after severe weather events). After natural disasters, high price becomes a major disincentive (e.g., prices in the Brisbane market have reached $15 per kilogram, compared to the average price ranging between $2.50 and $3.99 per kilogram).

1 The Nielsen Company, 2021, Harvest to Home, Nielsen Homescan for the 52 weeks ending 21/03/2021 for the Australian market

Industry production

FIGURE 3. Banana production, 2012/13 to 2019/20



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

Banana production in terms of both value and volume has been steady over the past seven years, indicating that the industry is in a mature state. 2018/19 and 2019/20 have both been strong years, with industry value around $600 million in 2014/15.

APPENDIX 2: Banana 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 5 has been used to analyse the banana 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 5. Banana SWOT analysis

The banana industry	
Strengths	• Consumers have a high understanding of nutritional value and health attributes of bananas as well as the strong association with providing 'energy' • Strong product awareness and penetration • Strong and effective, long-term marketing program having success in increasing bananas as an alternative snack product • Strong representative body in the ABGC • Positive environmental credentials • Robust biosecurity awareness, preparedness and application, including industry-wide biosecurity, contingency and pest management plans, and on-farm biosecurity plans • Strong commitment to effective biosecurity management
Weaknesses	• Reliance on a single variety for most of its production represents a significant risk from pest and disease, and limits category diversification • High level of on-farm waste, including fruit and plastic (between 5% and 30%, and as high as 50% recently) • Limited offer of size and ripeness at point of sale • Inaccurate/conflicting data around production and forecasting volumes • Limited access to timely pricing information to estimate market value

The banana industry	
Opportunities	• Management options and R&D for varieties that are resistant to Panama TR4 • Diversify disease and weather event risk by increasing production in other regions • Introduce other packaging systems to increase quality and choice at the retail level • Growing and changing consumer technology for health and lifestyle tracking • Diversify varieties that could meet different consumer needs and occasions • Access to significant international research, available through collaboration and partnership • Develop other value-adding uses for by-products and waste • Automation and mechanisation to reduce cost of production • Integrated quality assurance systems that achieve multiple outcomes including demonstrated business profitability benefits • Initiate the development of industry wide IPDM systems
Threats	• Biosecurity risk, especially Panama TR4, has the potential to wipe out the industry • Supply disruption due to significant climatic events – cyclone and storm damage • Oversupply to domestic market • Entry by low-cost exporters into Australian domestic market (retail price of $1.00 per kilogram) • Increasing cost of production from new biosecurity measures, cost of labour, fertilisers and transport • Reduction in available pest control chemicals • Impact of regulatory requirements imposed to protect the Great Barrier Reef

APPENDIX 3: People consulted

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

NAME	INDUSTRY ROLE	REGION
Jim Pekin	CEO, Australian Banana Growers' Council; Banana marketing SIAP member	Brisbane, QLD
Rosie Godwin	R&D Coordinator, Australian Banana Growers' Council; Banana R&D SIAP member	Brisbane, QLD
Chaise Pensini	Banana marketing SIAP member, Perfection Fresh	Sydney, NSW
Daniel Mackay	Mackay's Bananas; Banana marketing SIAP member	Brisbane, QLD
Doriana Mangili	CEO, Sweeter Banana Co-operative Ltd; Banana marketing SIAP member; Board, Australian Banana Growers' Council	Carnarvon, WA
Peter Molenaar	Grower, P&A Molenaar; Banana marketing SIAP member	Mullumbimby, NSW
Paul Inderbitzin	Grower, Kureen Farming; Banana Marketing SIAP member; Board, Australian Banana Growers' Council	Lakeland, QLD
Andrew Serra	Grower, Andrew Serra Farming; Banana Marketing SIAP member; Board, Australian Banana Growers' Council	Atherton Tablelands, QLD
Leon Collins	Deputy Chair, Australian Banana Growers' Council, Banana R&D SIAP member	Tully, QLD
Gary Fattore	Costa Group; Banana marketing SIAP member	Melbourne, VIC
Ben Franklin	National Operations Manager, Costa Group; Treasurer, ABGC, Banana R&D SIAP	Brisbane, QLD
Cameron Mackay	Grower, Mackay's Bananas	Mareeba, QLD
Andre Drenth	Project Lead, The University of Queensland	Brisbane, QLD
Stephen Spear	Grower; Board, Australian Banana Growers' Council; Banana R&D SIAP member	Taylors Arm, NSW
CONSULTATION MEETINGS AND WORKSHOPS UNDERTAKEN		
'Banana Industry Strategy Development Grower Workshop' held on 17 September 2021 in Innisfail, QLD: 12 growers in attendance		
'Banana Industry Strategy Development Grower Workshop' held on 18 September 2021 in Mareeba, QLD; seven growers in attendance		
'Banana Industry Strategy Development Grower Workshop' held on 12 September 2021 in Carnarvon, WA); six growers in attendance		
Australian Banana Growers' Council Board Meeting discussions held in September and November 2020, and February and May 2021; eight Directors in attendance		
Australian Banana Growers' Council Directors; all eight Directors were also individually interviewed by telephone or in person between February and May 2021		
Australian Banana Growers' Council Strategic Plan Working Group Workshop on 29 January 2021; total of five senior staff and four Directors attended the workshop for prioritisation and framework development		
The Banana Industry Development Officers (*National Banana Development and Extension Program* (BA19004)) led a series of project interviews across NSW and QLD from June to December 2020; interviews were conducted face-to-face at a farm visit with growers; in total 15 NSW growers and 17 QLD growers were interviewed		
Australian Banana Growers' Council Grower surveys were developed to seek additional information from industry. The survey was released online and by phone in the last quarter of 2020. 15 responses were received and incorporated		

APPENDIX 4: Reference material

Footnotes

1. The Nielsen Company, 2021, Harvest to Home, Nielsen Homescan for the 52 weeks ending 21/03/2021 for the Australian market

Reference documents

Australian Banana Growers Council, 2021, https://abgc.org.au/

Australian Fresh Produce Alliance, 2019, Growing a Healthier Australia: The Fresh Produce Industry Roadmap From $9 billion to $20 billion in 2030, White Paper 2019

Horticulture Innovation Australia Limited, 2012, Banana Strategic Investment Plan 2012-2017

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

Horticulture Innovation Australia Limited, 2020, Australian Horticulture Statistics Handbook 2019/20

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

APPENDIX 5: List of acronyms

ABGC	Australian Banana Growers' Council
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
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
PHA	Plant Health Australia
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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