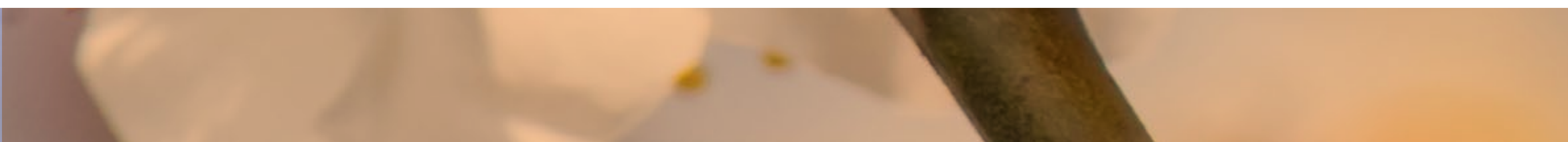
Hort Innovation

Hort Frontiers Pollination Fund

Strategic Investment Plan 2020-2025

hort frontiers
Strategic partnership initiative

POLLINATION FUND



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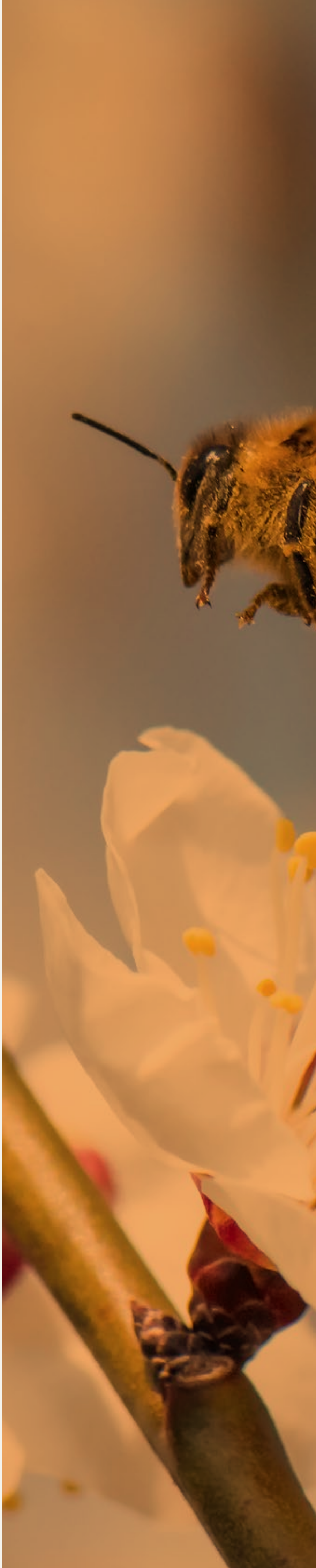
Communications Manager
Hort Innovation
Level 7, 141 Walker Street
North Sydney NSW 2060
Australia
Email: communications@horticulture.com.au
Telephone: 02 8295 2300



Content

Introduction

This Strategic Investment Plan (SIP) is the roadmap that guides Hort Innovation's co-investment programs in the Hort Frontiers Pollination Fund. The SIP lays the foundation and parameters for co-investment and represents the key investment themes critical for the fund to deliver benefit for the sector. The SIP investment themes define the purpose of the co-investment fund.

Horticulture Innovation Australia Limited (Hort Innovation) is the not-for-profit, grower-owned research and development (R&D) and marketing company for Australia's $13.2 billion[1] horticulture Industry.

As part of the role Hort Innovation plays as the industry services body for Australian horticulture, the company has developed the Hort Frontiers strategic partnership initiative (Hort Frontiers) to better equip Australian horticulture for the future challenges that need to be overcome in order to remain innovative and sustainable. Currently there are seven strategic investment funds within Hort Frontiers, each addressing a specific opportunity for the horticulture industry.

This SIP is the investment roadmap that provides the criteria and boundaries for the Hort Frontiers Pollination Fund (Pollination Fund) and its portfolio of investments. The SIP lays the foundation for guiding co-investment decisions, providing a clear vision, mission and investment priorities.

Hort Frontiers seeks seed funds from the broader research community, supply chain, levy funds along with Australian Government contributions. Strategic co-investment partners can be any entities that share a common investment purpose and want to invest in the future of horticulture – including commercial businesses, research agencies, government departments and education institutions. Whilst the individual goals of co-investment partners may differ, Hort Frontiers co-investments need to benefit all of horticulture to be considered.

1 Hort Innovation (2019). *Australian Horticulture Statistics Handbook 2017-18.*

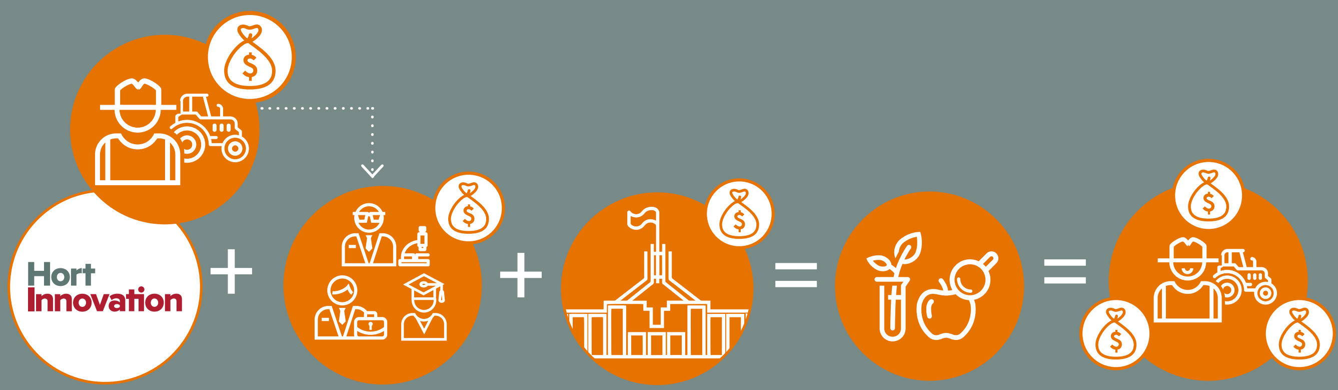
The investment strategy for the Pollination Fund, along with those of the other six individual funds, promotes the future growth and sustainability of the Australian horticulture industry as a whole. The SIPs for each of the funds are produced under the umbrella of the Hort Innovation Strategy 2019-2023, which takes a whole-of-industry view in setting its direction, as it considers broader agriculture government priorities for the advancement of Australian horticulture.

The process of preparing this SIP was managed by Hort Innovation and facilitated in partnership with the Pollination Fund's Expert Advisory Panel (EAP).

The EAP has responsibility for providing strategic investment advice to Hort Innovation. Both Hort Innovation and the EAP will be guided by the strategic investment priorities identified within this SIP.

Hort Innovation values highly the support, advice, time and commitment of all stakeholders that contributed to producing this SIP. The people consulted in the preparation of the SIP are listed in ***Appendix 1***.

For more information on the Pollination Fund please visit Hort Innovation's website at ***www.horticulture.com.au/hort-frontiers***.



Hort Innovation investment management strategy for longer-term initiatives

Strategic partnership money contributions are sought, brokered and combined by Hort Innovation

Australian Government contributions are added through leveraged public money

Monies are invested in longer-term, cross-sector initiatives

Helping growers to be more productive, profitable and competitive

The purpose of the Pollination Fund (plan on a page)

FUND PURPOSE

The Pollination Fund's purpose is to enhance horticulture crop production and resilience through improved pollination

1

Improving management of European Honey Bee for pollination

INVESTMENT PRIORITIES

1. Future-proof against endemic and exotic pests and diseases
2. Understand requirements of bee nutrition
3. Understand impacts of growing systems on pollination success
4. Increase effectiveness of hive management and services
5. Develop and test superior bee genetics

2

Optimising crop pollination

INVESTMENT PRIORITIES

1. Understand current and future pollination requirements
2. Develop adaptive and tailored strategies to meet pollination requirements
3. Integrate effective pollination into horticulture production systems
4. Understand environmental and climatic barriers to effective pollination

3

Developing alternate pollination options

INVESTMENT PRIORITIES

1. Increase capability and industry capacity to utilise alternative pollinators
2. Develop and enable novel technologies to support pollination
3. Pollination options developed to meet the diverse needs of horticulture crop production

Extension and adoption of new knowledge and best practice for improved pollination

OUTCOMES (1)

Improved management of European Honey Bee for pollination

OUTCOMES (2)

Crop pollination requirements are understood and integrated into best practice

OUTCOMES (3)

Alternate pollination options developed and available

INVESTMENT OUTCOME

A resilient and prepared horticulture sector equipped with the necessary research and capacity to meet ongoing and changing pollination needs

Investing in a resilient and prepared horticulture sector

$6 BILLION

ANNUAL VALUE OF AUSTRALIAN POLLINATION-DEPENDENT CROPS

$3.85 BILLION

ANNUAL CONTRIBUTION OF EUROPEAN HONEY BEES TO AUSTRALIA

SECTION ONE
Context

Current state of pollination in Australia

Purpose of the Pollination Fund

The Pollination Fund aims to enhance and support existing pollinators and identify the most effective pollination methods for various horticulture crops by undertaking strategic research and development (R&D).

Pollination is the transfer of pollen grains from one flower to another and accounted for 37 per cent of the realised value of Australian horticulture production in 2017-2018 (excluding nursery products). The individual fruit, vegetable and nut products that depend on pollination account for 64 per cent of the total horticultural production volume[2]. In Australia, pollination-dependent crops have been estimated to be worth over $6 billion per annum, with a direct contribution by European Honey Bees estimated to be worth over $3.85 billion[3]. Globally, crops that are directly reliant on pollination are estimated to account for 39 per cent of the global value of agricultural production[4].

European Honey Bees (*Apis mellifera*) are the largest managed pollinator in Australian agriculture. The future of pollination-dependent horticultural industries is closely linked to the health and sustainability of the Australian European Honey Bee industry. In Australia, the European Honey Bee industry faces a myriad of challenges including endemic pests and diseases and exotic threats such as Varroa mite (*Varroa destructor*). Australia is the last country in the world where Varroa mite has not taken hold of the European Honey Bee population. The mite and the viruses it vectors are implicated as the primary threat to managed European Honey Bee health, and has led to significant increases in colony loss rates following introduction to new regions or countries as seen in the United States, Canada and New Zealand. The Australian horticultural industry shares these challenges with beekeepers as many horticultural crops are dependent on European Honey Bees to ensure adequate pollination for crop yield.

More broadly, insect pollinators are declining globally and threatening productivity in cropping systems. Understanding the role and integration of the many types of pollinators and their success at pollinating horticultural crops under field conditions is limited. Knowledge is lacking about the diversity and abundance of pollinator populations on farms, and the potential to support and encourage ongoing sustainable pollination.

The purpose of the Pollination Fund is to enhance horticulture crop production and resilience through improved pollination. The fund has three key investment priorities:

- Improve management of European Honey Bee for pollination
- Optimise crop pollination
- Develop alternate pollination options.

2 Hafi A, Morey K and Caley P (2012) *A benefit-cost frameworks for responding to an incursion of Varro destructor*, ABARES Research report 12.5; Gordon and Davis, 2003, *Valuing Honeybee Pollination*, RIRDC Publication No 03/077); Hort Innovation (2019). *Australian Horticulture Statistics Handbook 2017-18*; Hort Innovation calculations.

3 *Ibid*

4 Gallai, N., Malles, JM., Settele, J., and Vaissière, BE, (2009). Economic valuation of the vulnerability of world agriculture confronted with pollinator decline. *Ecological Economics*, 68(3) 810-821.

Operating environment

The Pollination Fund is a strategic partnership initiative which requires co-investment from eligible partners to leverage Hort Innovation (Australian Government) funds to build strong relationships with world-class delivery partners. Hort Frontiers provides benefits to co-investors and partners alike by facilitating collaboration with industry experts, leveraging government or levy funding and developing the capability to address strategic R&D needs.

Through understanding the strengths, weaknesses, opportunities and threats relevant to the Pollination Fund, potential co-investors and partners are informed and positioned to deliver real outcomes for pollination-dependent horticulture growers and Australian pollination services.

An analysis of the industry's strengths, weaknesses, opportunities and threats (SWOT) was undertaken through consultation with the Pollination Fund's EAP and the broader grower base to identify the current operating environment as shown below in ***Table 1.***

TABLE 1: Pollination Fund operating environment – SWOT analysis

Pollination Fund operating environment – SWOT analysis	
Strengths	• Australia's European Honey Bee industry is amongst the strongest in the world • Strong biosecurity frameworks and protection against exotic threats • Internationally recognised R&D and industry best practice • Research community willingness to collaborate in strategic partnerships
Weaknesses	• Diverse stakeholder groups with varying needs and priorities • Competing priorities between honey production and pollination services • Lack of critical mass in funding; co-investment; and research capability to grow the capacity of the European Honey Bee industry • Lack of production planning and budget allocation for pollination services
Opportunities	• Novel technologies to increase efficiency of pollination • Collaboration across horticulture production service providers and across Research Development Corporations (RDCs) • Engagement with international and commercial research partners • Communicating pollination priorities and challenges to the general public • All key stakeholders identify pollination as an investment priority
Threats	• Insufficient supply of European Honey Bee hives to meet the pollination needs of increased horticulture production • Significant reliance on one primary pollinator – European Honey Bee – for all pollination needs • Increased cost for pollination services in the event of a biosecurity breach • Reduced access to floral resources (pollen and nectar) such as public lands

The purpose of the Pollination Fund is to enhance horticulture crop production and resilience through improved pollination

SECTION TWO
Pollination outcomes and priorities

Purpose of the Pollination Fund

The purpose of the Pollination Fund is to enhance horticulture crop production and resilience through improved pollination. To achieve this, partners must deliver sustainable pollination outcomes and address cross-industry strategic pollination issues by supporting effective R&D and extension solutions. Our key stakeholders are pollination-dependent horticulture industries, Australian pollination service providers, state governments and the Australian Government through the Department of Agriculture.

Overall, this SIP seeks to address the significant barriers that impact on the viability and sustainability of pollination success for the Australian horticulture sector. The outcomes of the SIP are to ensure a resilient and prepared horticulture sector is equipped with the necessary research and capacity to meet ongoing and changing pollination needs.

Pollination Fund investment priorities

The following industry investment priorities have been identified by the Pollination Fund's EAP and other stakeholders as those most likely to provide broader industry benefits. Potential deliverables are also listed. Actual deliverables will depend on the pollination investments developed and implemented.

These outcomes for industry will be delivered through R&D and industry capacity building activities for apiarists and horticulture producers. While there is a significant focus on increasing the effectiveness of existing pollinators, there is also concerted effort to ensure Australian horticulture industries have access to viable and sustainable pollination options that meet future needs.

OUTCOME 1	
Improved management of European Honey Bee for pollination	
The Australian European Honey Bee industry has a gross value of production estimated at $101 million (2014-2015)[5] and is the main source of paid pollination services to the horticultural industry. To ensure the ongoing viability of the European Honey Bee industry for pollination services, it is critically important to continue to grow the capacity of the sector to meet the growing demands of the horticulture industry. A failure of supply will result in reduced productivity and yield for pollination-dependent horticultural industries. Pollination services was estimated to account for approximately 64 per cent of the total horticulture crop volume in 2017-2018[6].	
Strategies	**Possible deliverables**
1.1: Safeguard European Honey Bees from exotic and endemic pest threats	Protection and remediation plans developed for new invasive pests and diseases Improved framework to increase capacity for European Honey Bee biosecurity Mitigation strategies to prepare the European Honey Bee industry against future pest threats Innovative management techniques to manage the threat of endemic pests
1.2: Support research to advance understanding of European Honey Bee nutritional requirements	Undertake R&D to understand the optimal nutrition and health of European Honey Bees for pollination Undertake R&D to understand the seasonal variations in natural reserves of European Honey Bee nutrition
1.3: Develop clear guidelines and tools to optimise hive setup and deployment for improved pollination across all horticultural growing systems	Guidelines on optimal hive set up and deployment Tools developed to support adoption of guidelines across all horticulture growing systems Novel technologies developed to manipulate hive dynamics to maximise pollination success
1.4: Identify the impacts of farm inputs and management practices to better equip growers and apiarists to improve pollination success	Undertake R&D to understand the impacts of farm inputs and management practices on pollination success Undertake R&D to understand the impacts of natural resource management on pollination success Information available on the impacts of farm inputs, natural resource management and management practices (such as chemicals, weed management and companion plants) for horticultural producers and apiarists
1.5: Develop and test superior European Honey Bee genetics for optimised pollination	Undertake R&D to access and identify novel superior bee germplasm for optimised pollination Next generation technologies used to develop superior genetics for European Honey Bees
1.6: Extension of Best Practice Management (BPM) of European Honey Bee for optimised pollination	Grower extension activities delivered by industry extension personnel Partnerships developed between the European Honey Bee industry and horticulture producers

5 van Dijk, J, Gomboso, J & Levantis, C (2016), *Australian honey bee industry: 2014–15 survey results*, ABARES research report 16.18, Canberra, December. CC BY 3.0
6 Hort Innovation calculations using *Australian Horticulture Statistics Handbook 2017-18*, Hafi et al. (2012) and Gordon and Davis (2003).

OUTCOME 2

Crop pollination requirements are understood and integrated into best practice

The horticulture sector is on a steep pathway of growth. To ensure this is sustained, along with a number of imperatives, an effective pollination strategy needs to be developed.

Understanding the needs of horticulture crops will allow for effective pollination strategies to be developed to ensure pollination is not a yield limiting factor. As the horticultural industry continues to change and progress, the requirements for pollination need to be adapted for best practice and cost effectiveness.

Strategies	Possible deliverables
2.1: Identify current and future pollination requirements for horticulture crops	Undertake R&D to define current and future pollination requirements of the horticulture industry by crop, geographical location and pollination reliance Undertake R&D to understand potential yield deficiencies in relation to pollination Undertake R&D to understand the availability of pollination options to meet the future demands of horticulture crops Current and future pollination requirements strategy for all of horticulture
2.2: Develop adaptive and tailored strategies for optimised pollination	Strategies available for optimised pollination across horticultural crops and regions Partnerships between pollination service providers and growers
2.3: Integrate pollination into crop management systems and best practice across all horticultural production systems	Undertake R&D to understand the pollination requirements of horticultural crop management systems Information on crop management systems requirements available and integrated into 'current and future pollination requirements' guidelines
2.4: Understand the effects of environmental and climatic factors as barriers to effective pollination	Undertake R&D to identify the effects of a changing environment on effective pollination New knowledge and information available on the effects of a changing climate on effective pollination
2.5: Extension of best practice to optimise crop pollination	Grower extension activities delivered by industry extension personnel Partnerships between delivery partners, European Honey Bee industry and horticulture growers

OUTCOME 3	
Alternate pollination options developed for increased productivity	
Whilst European Honey Bees contribute to the majority of pollination services in Australia, the recognition of the need to develop alternate pollinators to work alongside and concurrently to European Honey Bees is critical to establishing a resilient horticulture sector. Australia is home to diverse pollinators that can be further adapted and enhanced to enable ongoing effective pollination. Growers will be empowered with a range of pollination options and tools to ensure maximum yield can be achieved.	
Strategies	**Possible deliverables**
3.1: Increase the capability and capacity of alternate pollinators	Undertake R&D to understand the capacity and practical adoption of native stingless bees as crop pollinators alongside other alternate pollinators Undertake R&D to investigate the capacity of less commercial, alternate biological pollination options (such as flies) to meet the future needs of horticulture crops
3.2: Develop and enable novel technologies to support pollination	Undertake R&D to understand the potential of current alternate non-biological pollination options to meet the future needs of horticulture crops Novel technologies to support pollination developed Partnerships, including those with accelerator programs and innovation labs, to develop and test novel technologies that address the future pollination needs of horticulture crops
3.3: Develop alternate pollination options	Development of integrated approaches to pollination that are fit for purpose and include diverse pollination options such as stingless bees and flies Tools and materials developed to empower growers to make best practice decisions
3.4: Extension of best practice use of alternate pollination options in an integrated approach to pollination	Grower extension activities delivered by industry extension personnel Guidelines on the integration of alternate pollinators with current pollination services available Tools available to support integration of alternate pollinators in growing systems Partnerships between delivery partners, European Honey Bee industry and horticulture growers

> **Addressing the significant barriers that impact pollination and its viability and sustainability**

SECTION THREE
Pollination Fund SIP monitoring and evaluation

Pollination Fund SIP monitoring, evaluation and reporting

A SIP program logic, and an indicative monitoring and evaluation (M&E) plan has been developed for the Pollination Fund SIP. These are informed by the Hort Innovation Organisational Evaluation Framework. The logic maps a series of expected consequences of SIP investment. The indicative M&E plan shows potential performance measures to demonstrate progress against the SIP and possible data to be collected, shown in ***Table 2***. Progress against the SIP will be reported in Hort Innovation publications and at the Pollination Fund's EAP meetings.

The SIP outcomes and strategies will be used to inform investments in individual projects to deliver the SIP. The results of M&E will be used to reflect on the results of investments and in decision making. Hort Innovation will facilitate the regular review of SIPs to ensure they remain relevant to industry.

Monitoring and evaluation plan

As there are many unknowns regarding pollination best practice and the prominence of different factors which affect pollination success, the approach to M&E will need to continually evolve. For example, deliverables under Strategy 2.1 may provide baseline measures on pollination requirements which can be introduced as key performance indicators (KPIs).

Pollination services data is scarce compared with other agricultural input markets, especially compared to the relative cost and importance of other inputs. This presents an opportunity to frame pollination as a vital input to horticultural production, one which could significantly lift productivity, but also leaves horticulture vulnerable to large-scale crop losses. By framing pollination in this way data should be collected in a manner similar to other production inputs, which will inform further analysis into its value to production.

Pollination is a seasonal requirement, with each crop requiring pollination services at different times of the year. Different crops are also located in specific regions across Australia, meaning pollination services are required not only at different times, but also in different locations in varying numbers. For pollination outcomes to be effectively measured, pollination requirements and the availability of pollination services needs to be measured across both time and space.

Another important dimension of M&E will be measuring the adoption of R&D outputs. An added dimension to this is the need to increase adoption by apiarists, not just growers. Apiarists need to adopt any research outputs which strengthen colonies, protect against threats to hive health and increase pollination effectiveness. Growers also need to be aware of pollination developments so they can make informed choices on how best to pollinate their crops, and therefore, increase yield and quality.

Pollination Fund SIP logic

An indicative Pollination Fund SIP program logic is shown below in ***Figure 1***. The logic is based on the Hort Innovation SIP logic hierarchy (***Appendix 2***). The shaded boxes are not fully explicit in the strategy but necessary conditions for the achievement of expected outcomes.

FIGURE 1: Pollination Fund SIP logic

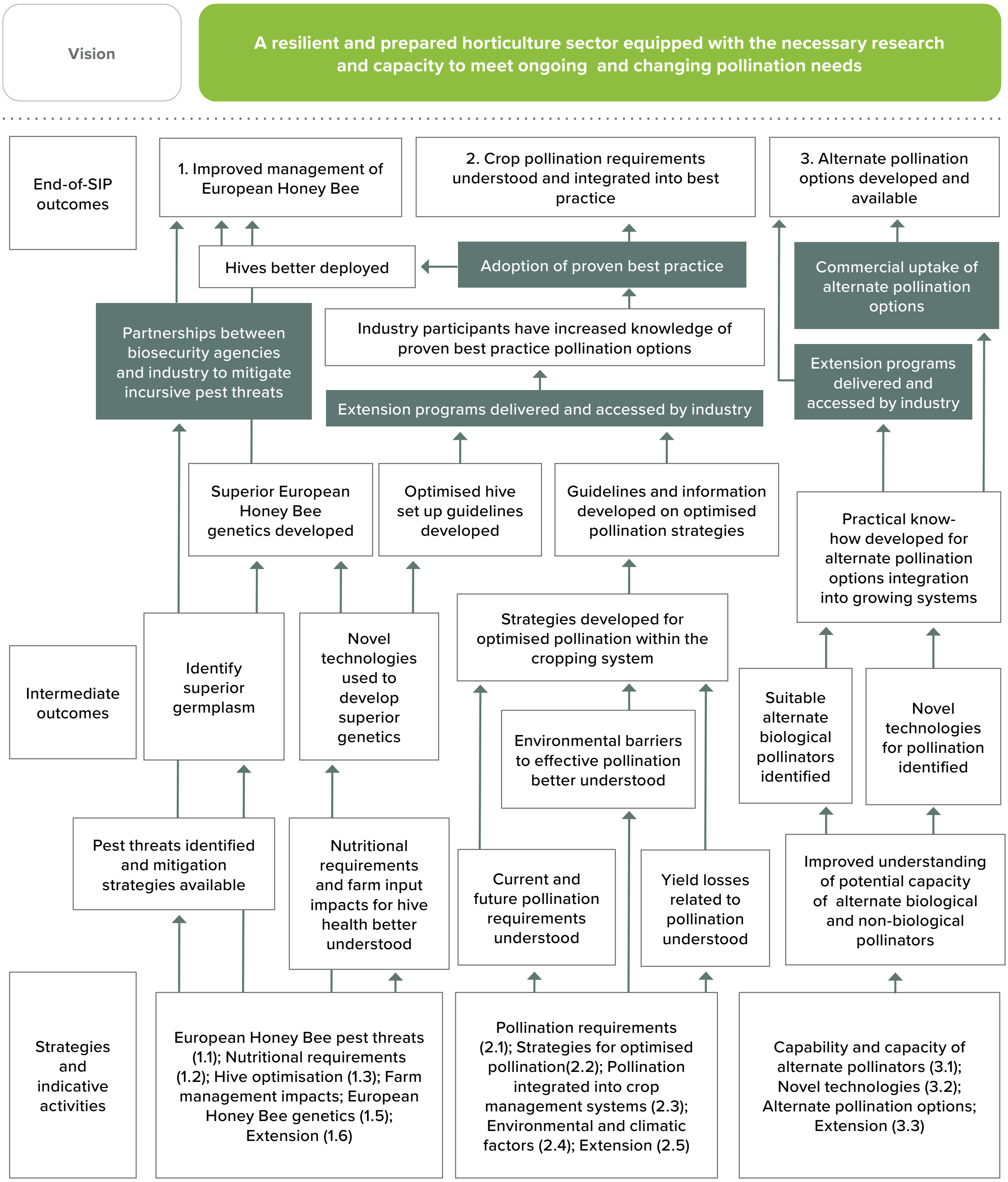


TABLE 2: Monitoring and evaluation plan for the Pollination Fund SIP

Outcomes	KPIs	Data collection methods and sources
Improved management of European Honey Bee for pollination	Recommendations based on R&D available for best practice management of European Honey Bees New information available on overall health and capacity of managed European Honey Bee populations Number of colonies used for pollination services across Australia, by region, is understood Improved biosecurity framework Guidelines and tools developed for optimal hive set up and deployment Adoption rates of research and development outputs, by both growers and apiarists	R&D project records Data analysis of current level of service and growth of bee services in horticulture industries Pollination reliance data Pollination-dependent industries production data (for example, ABS and Australian Horticulture Statistics Handbook) Yield and quality data (if available) associated with different pollination services Data and economic analysis on pollination requirements and value Grower and extension activity surveys on improved knowledge and uptake of new information Horticulture grower and apiarist surveys
Crop pollination requirements are understood and integrated into best practice	Strategies for effective pollination developed and their uptake by industry Current and forecast pollination requirements documented for all pollination-dependent horticulture industries Current and forecast pollination supply documented across different regions Practical information available to horticulture industries on considerations for effective pollination within crop management systems Adoption rates of research and development outputs, by both growers and apiarists	
Alternate pollination options developed for increased productivity	Alternate pollinator options (biological and non-biological) for horticulture crops identified and piloted Progress made to increase availability of pollination options Partnerships established to develop novel pollination technologies	

SECTION FOUR
Impact assessment

Impact assessment

The vision of the Pollination Fund SIP is to achieve a resilient and prepared horticulture sector equipped with the necessary research and capacity to meet ongoing and changing pollination needs.

The vision will be realised through investments that address and support the outcome areas of this SIP. Through contributing to the end-of-SIP outcomes, a range of impacts will be generated for the horticulture sector and affiliated stakeholders as a result. In the absence of annual investment commitment amounts, coupled with the longer-term research imperative applicable for Hort Frontiers fund investments, impacts for the Pollination Fund are identified qualitatively. The quantification of impacts may be possible at the project level through establishment of a relevant baseline and the measurement and assessment of the associated research contribution.

Table 3 provides a qualitative summary of the principle types of impacts that will be delivered through investment into the Pollination Fund. The impacts are categorised through a triple bottom line approach – economic, social and environmental impacts.

TABLE 3: Economic, social and environmental impacts – Pollination Fund

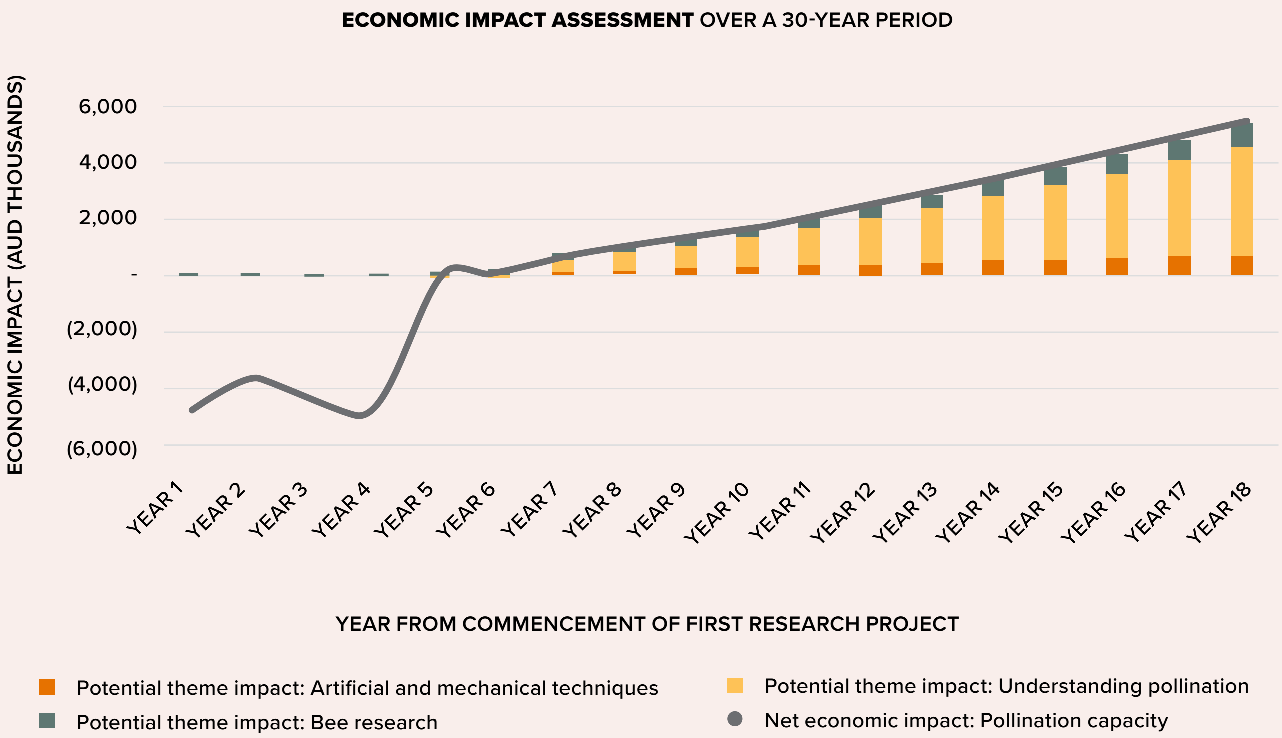
Impact Category	Impact
Economic	**Improved yield for pollination-dependent crops:** Pollination-dependent crops have a production value of $6 billion, and pollination directly contributes to approximately 65 per cent, or $3.85 billion of this productive capacity.[7] Establishing best practice pollination processes will contribute to improved yields and grower profitability for those crops that are pollination-dependent. **Improved quality and farm gate price achieved for pollination-dependent crops:** Emerging evidence[8] indicates that cross pollination has significant impacts on fruit and nut quality (for example, size, sugar content) which contribute to improved price and profitability. **Reduced loss of pollinator services through enhanced biosecurity capability and pollination resilience:** As an indication, a 100 per cent loss of European Honey Bee pollination, over 30 years, has been estimated to result in a national economic loss of between $1.3 and $1.7 billion. Horticulture losses would account for up to $1.5 billion or 88 per cent of total losses.[9] The capacity to manage biosecurity threats to traditional pollinators while improving alternative pollinator capacity will mitigate losses to pollination-dependent crop production on account of compromised pollination capacity.
Social	**Availability of horticulture produce:** The loss of pollination services has been estimated to result in decreased consumer surplus of $796 million, or 45 per cent of total losses[10] on account of reduced food supply, reduced quality and increased cost. This will support social outcomes relating to health and wellbeing. **Resilience of local communities:** A vibrant horticulture industry will continue to provide an important source of employment and economic stimulus to local communities.
Environmental	**Health and resilience of native vegetation:** Delivered through improved capacity for the pollination of vegetation through native pollinators.

7 Hort Innovation calculations using Hafi et. al (2012); Gordon and Davis (2003) and production values from the *Australian Horticulture Statistics Handbook 2017-18.*
8 Geslin, B., M. Aizen, N. Garcia, A. J. Pereira, B. E. Vassière, and L. A. Garabaldi (2017). The impact of honey bee quality on crop yield and farmers' profit in apples and pears. *Agric. Ecosyst. Environ.* 248: 153–161.
9 Hafi et al (2012).
10 ibid

The outlined impacts are both public and private in nature. Public impacts will be realised through the sustained consumption of horticultural products through supporting their availability, while private benefits will be realised by growers (through improved yield and sales) and other supply chain participants, and apiarists (improved demand for, and of pollination services). Improved pollination capacity in horticulture may also generate indirect impacts for other agricultural industries affected by pollination such as broadacre cropping.

In 2016 a separate and independent prioritisation analysis of the Hort Frontier funds was conducted in consultation with subject matter experts and industry. The aim of the analysis was to identify the highest impact research themes and collect data to support impact modelling. On completion of the economic impact assessment, the funds were then prioritised based on the estimated economic impact. Pollination was ranked highly with an estimated net economic impact of $46.4 million over a 30-year period, a summary of which is captured in ***Figure 2***.

FIGURE 2: Hort Innovation (2016), ***Strategic co-investment funding pool: Prioritisation of research funds***[11]



Note 1. *The assessed industry benefits for the shortlisted fund taking into account research funding net economic impact = (potential theme impacts within shortlisted fund) – research funding*
Note 2. *The risk-adjusted industry benefits not taking into account research funding: potential theme impact = (industry benefits – cost of adoption) x research strength x adoption x impact generation*

11 Consulting and Implementation Services (2016). Strategic co-investment funding pool prioritisation of research funds.

APPENDICES

APPENDIX 1: Consultation

The following people were consulted during the development of this SIP. Hort Innovation gratefully acknowledges there assistance:

Full Name	Relationship to Hort Innovation
Danny Le Feuvre	Pollination Fund Expert Advisory Panel member
David Pattemore	Pollination Fund Expert Advisory Panel member
James Cook	Pollination Fund Expert Advisory Panel member
Graeme Smith	Pollination Fund Expert Advisory Panel member
Ben Brown	Pollination Fund Expert Advisory Panel member
Maurizio Rocchetti	Pollination Fund Expert Advisory Panel member
Max Whitten	Industry expert
Chris Fuller	Industry expert
Rob Wheatley	Industry expert
Cameron Spurr	Industry expert

APPENDICES

APPENDIX 2: Logic hierarchy

Level	Description	Scope
Vision	To grow the future of Australia's horticulture industries	**Common for all Investment**
Mission	Increased profitability of Australia's horticulture industries Increased productivity of Australia's horticulture industries Increased global competitiveness of Australia's horticulture industries	**Common for all Investment**
Hort Innovation end-of-strategy outcomes	**Support industry efficiency & sustainability** **Improve productivity of the supply chain** **Grow the horticulture value chain capacity** **Drive long-term domestic and export growth** **Lead strategically**	**Common for all Investment**
End-of-SIP outcomes	*The industry-specific outcomes of the SIP. The final desired result of SIP investment but may be achieved after the SIP time-frame. SIP investment may be just one contributing factor to the achievement of these outcomes. For example, incremental productivity, profitability and competitiveness improvements stimulated through R&D, changes in consumer awareness, marketing campaign reach and influence and increased recognition of Australian horticulture products.*	**SIP specific**
SIP intermediate outcomes	*Short- to medium-term changes brought about through the SIP, which will support the achievement of end-of-SIP outcomes. For example, practice changes, adoption, changes in grower knowledge, attitudes, skills and aspirations (KASA) and marketing reach.*	**SIP specific**
SIP activities and outputs	*What is directly delivered by the SIP (R&D, extension and marketing activities and outputs, for example, products and services, and events and engagement) across the 11 horticulture cross-sectoral investment themes: Pest and Disease Management, Crop Production, Sustainability Improvements, Novel Technologies, Data Insights,Industry Development, Product Integrity, International Market Development, Market Access and Trade, Domestic Market Development, Strategic Drive and Corporate Services.*	**SIP specific**
Foundational activities	*Preliminary or preparatory activities that are conducted before and during SIP delivery. Includes industry processes, infrastructure and resources that enable the SIP to be developed and delivered. Includes SIP planning, consultation, advisory meetings etc.*	

Hort Innovation

Level 7, 141 Walker Street
North Sydney NSW 2060

Telephone 02 8295 2300

horticulture.com.au