

# Berries impact assessments 2021

During 2020/21, Hort Innovation engaged independent consultants to evaluate the impact of berry research and development over the five years ending 30 June 2020. For this, impact assessment projects from the Strawberry Fund and the Raspberry and Blackberry Fund were grouped together. The assessment provided insights into the type and magnitude of impacts generated from both Strawberry Fund investments and Raspberry and Blackberry Fund investments.

The evaluation revealed a range of economic, social and environmental benefits being generated for berry growers, supply chain participants and the community at large.



# How the impact assessments were made

The approach for evaluating the impacts was performed in line with impact assessment guidelines defined by the Council of Rural RDCs. The impact assessment consultants engaged with researchers, Hort Innovation staff and industry stakeholders to support the evaluations.



## Project population defined

A pool of strawberry and rubus research and development (R&D) projects was identified, with the criteria of being completed between 1 June 2015 and 30 June 2020 and with a Hort Innovation managed investment value of at least \$80,000 – met by a total of 17 projects with total investment value of \$8.59 million.



## Projects sampled

From this pool a random sample of four projects was selected (listed in subsequent table). Together these four projects had a nominal Hort Innovation managed investment value of \$2.36 million (26.9 per cent of the overall investment value).

Of the four projects randomly selected, three were funded through the Strawberry Fund, and one from the Raspberry and Blackberry Fund.

The three Strawberry Fund projects aligned with the Strawberry Fund 2017-2021 Strategic Investment Plan (SIP). Two projects aligned with Outcome 3 (productivity), and one aligned with Outcome 4 (value chain engagement). No projects in the sample aligned with Outcome 1 (demand) or Outcome 2 (increasing exports).

The Raspberry and Blackberry Fund project randomly selected aligned with Outcome 3 (productivity) of the Raspberry and Blackberry Fund 2017-2021 Strategic Investment Plan (SIP). No projects in the sample aligned with Outcome 1 (demand) or Outcome 2 (increasing exports) or Outcome 4 (engagement).



## Projects evaluated

Each of the four projects was evaluated using a framework approach, looking at project objectives, activities, outputs and impacts. Some of the impacts identified were also valued in monetary terms.



# The results

The results demonstrated that the benefits of R&D investments in the Strawberry Fund and Raspberry and Blackberry Fund represented a sound investment for growers, with the **benefit-cost ratio of the four sampled projects estimated at 3.31 to one**. Together, the benefits of the four projects are expected to deliver some **\$14.31 million in additional value** to the industry and community over the next 30 years (considering the present value of their benefits, minus the present value of their project costs).

*Note that some, but not all, of the impacts identified for each project investment were quantified as part of the evaluation process. Generally, impacts weren't quantified due to shortages of evidence/ data or the levels of uncertainty and significance regarding the impacts. As not all impacts were valued, it is likely that the estimates reported are conservative estimates of the impacts of the Hort Innovation R&D investment evaluated.*

*Through the assessments, 21 impacts were identified as having been generated directly by the four randomly selected projects. Economic and social impacts were grouped into the following seven broad categories. Environmental impacts included reduced potential for agricultural chemical, soil and/or other nutrient export to the off-farm environment through reduced on-farm chemical/ fertiliser use.*

## Economic impacts

### INCREASED PROFITABILITY FOR THE BERRY INDUSTRY.

(e.g. through reduced costs, increased farm income, and/or increased consumer demand)

**EXAMPLE:** *Building resilience to drupelet disorder in Rubus (RB14003)* improved profitability by facilitating a reduction in the incidence/severity of Red Drupelet Reversion (RDR) for some Australian rubus growers resulting in an increase in the gross margin per hectare via one or more benefits of increased yield, increased price and/or reduced costs.

### INCREASED RATE OF GAIN IN VARIETAL PERFORMANCE AND/OR AN INCREASE IN CAPITAL VALUE OF UNRELEASED GERmplasm.

**EXAMPLE:** *National Strawberry Varietal Improvement Program – Southern Node (BS11013)* led to an increase in capital value of unreleased strawberry germplasm in the program between 2013 and the end of the investment in 2018.

### IMPROVED INDUSTRY DECISION MAKING AND/OR IMPROVED R&D RESOURCE ALLOCATION.

**EXAMPLE:** *Assisting the ongoing development of the Queensland Strawberry Industry (BS12015)* improved R&D resource allocation due to an increasing appreciation of the feedback from the Queensland industry on new varieties and other issues.

### OTHER/MISCELLANEOUS.

**EXAMPLE:** *Developing virus molecular diagnostics for post entry quarantine and certification of strawberry runners (BS12009)* reduced the risk of pathogen incursions into the Victorian Strawberry Industry Certification Authority strawberry certification scheme.

## Social impacts

### INCREASED REGIONAL COMMUNITY WELLBEING FROM SPILL OVER BENEFITS OF A MORE PRODUCTIVE AND PROFITABLE BERRY INDUSTRY.

**EXAMPLE:** *Assisting the ongoing development of the Queensland Strawberry Industry (BS12015)* led to increased regional community spill overs captured by local families and businesses along the supply chains from a more productive Queensland strawberry industry.

### INCREASED INDUSTRY AND/OR RESEARCHER CAPABILITY AND CAPACITY.

**EXAMPLE:** *Developing virus molecular diagnostics for post entry quarantine and certification of strawberry runners (BS12009)* enhanced capability and capacity of scientists associated with strawberry pathogens.

### OTHER/MISCELLANEOUS.

**EXAMPLE:** *Building resilience to drupelet disorder in Rubus (RB14003)* improved R&D resource allocation in future research and extension investment addressing Red Drupelet Reversion (RDR).



**\$14.31**  
**MILLION**  
NET PRESENT VALUE



# Reporting

Impact assessment results can also be used to understand the impacts achieved by the SIP outcome area. The results provide an assessment of indicative impacts by project but are not representative of all investments undertaken in each outcome area.

## REPORTING AGAINST THE STRAWBERRY STRATEGIC INVESTMENT PLAN 2017-2021

Project code	PROJECT NAME	Present value of benefits (\$m)	Present value of costs (\$m)	Net present value (\$m)	Benefit-cost ratio
<b>Strategic Investment Plan Outcome 1:</b> <i>By 2021, per capita domestic consumption of fresh Australian strawberries will increase by 10 per cent, underpinned by consistent supply of premium quality fruit that matches consumer desires.</i>					
No sampled projects aligned with Outcome 1					
<b>Strategic Investment Plan Outcome 2:</b> <i>By 2021 increase exports of Australian strawberries from four per cent to at least eight per cent of national production by volume, in selected markets, with a capacity and willingness to pay a premium for quality fruit</i>					
No sampled projects aligned with Outcome 2					
<b>Strategic Investment Plan Outcome 3:</b> <i>Greater skills, capacity and knowledge in the industry</i>					
BS11013	National Strawberry Varietal Improvement Program – Southern Node	12.59	4.78	7.81	2.63
BS12009	Developing virus molecular diagnostics for post entry quarantine and certification of strawberry runners	2.57	0.41	2.16	6.23
<b>Strategic Investment Plan Outcome 4:</b> <i>By 2021, at least 90 per cent of growers and other firms involved in the strawberry value chain will be directly engaged with and value national industry services</i>					
BS12015	Assisting the ongoing development of the Queensland Strawberry Industry	3.76	0.72	3.04	5.25

## REPORTING AGAINST THE RASPBERRY AND BLACKBERRY STRATEGIC INVESTMENT PLAN 2017-2021

Project code	Project name	Present value of benefits (\$m)	Present value of costs (\$m)	Net present value (\$m)	Benefit-cost ratio
<b>Strategic Investment Plan Outcome 1:</b> <i>By 2021, domestic per capita consumption of fresh Australian raspberries will increase by at least 40 per cent, supported by positive consumer perceptions of product value</i>					
No sampled projects aligned with Outcome 1					
<b>Strategic Investment Plan Outcome 2:</b> <i>By 2021, exports of Australian raspberries exceed five per cent of national production by volume, in selected markets with a capacity and willingness to pay a premium for quality fruit</i>					
No sampled projects aligned with Outcome 2					
<b>Strategic Investment Plan Outcome 3:</b> <i>By 2021, the industry will increase farm productivity (marketable yield per hectare) by an average 10 per cent</i>					
RB14003	Building resilience to drupelet disorder in Rubus	1.58	0.28	1.30	5.71
<b>Strategic Investment Plan Outcome 4:</b> <i>By 2021, at least 90 per cent of growers and other firms involved in raspberry and blackberry value chains will be directly engaged with and value national industry services</i>					
No sampled projects aligned with Outcome 4					

## GLOSSARY OF ECONOMIC TERMS

The following economic terms have been used in the above table, illustrating the cost-benefit analysis results by project sampled:

- **Present value of benefits:** The discounted value of benefits to 2020/21 terms.
- **Present value of costs:** The discounted value of investment costs to 2020/21 terms.
- **Net present value:** The discounted value of the benefits of an investment, less the discounted value of the costs – that is, present value of benefits minus value of costs.
- **Benefit-cost ratio:** The ratio of the present value of investment benefits to the present value of investment costs.