

# Apple and pear impact assessments 2019

During 2018/19, Hort Innovation engaged independent consultants to evaluate the impact of apple and pear research and development over the five years ending 30 June 2018. Assessment provided insights into the type and magnitude of impacts generated from Apple and Pear Fund investments.

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





## How the impact assessments were made

### Project population defined

### Projects sampled

### Projects evaluated



A pool of Apple and Pear Fund research and development (R&D) projects was identified, with the criteria of being completed between 1 June 2013 and 30 June 2018 and with a Hort Innovation managed investment value of at least \$80,000 – met by a total of 19 projects with a Hort Innovation investment value of \$33.31 million.

From this pool a **random sample of nine projects** was selected (listed in subsequent tables). Together these nine projects had a nominal Apple and Pear Fund value of \$15.46 million (46.4 per cent of the overall investment value). Three of the projects aligned with apple and pear Strategic Investment Plan (SIP) 2017-2021 Outcome 1 (reduce production cost), one aligned with Outcome 2 (increase demand), two aligned with Outcome 3 (increase profitability) and three aligned with Outcome 4 (industry culture).

Each of the nine 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 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.

# The results

The results demonstrated that the benefits of R&D investments in the Apple and Pear Fund represent a sound return on investment for growers, with the benefit-cost ratio of the nine sampled projects coming out at between **2.0** and **5.1 to one**. Together, the benefits of the nine projects are expected to deliver some **\$28.9 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). Keeping in mind that while some impacts were valued, other benefits weren't quantifiable – meaning these results give a conservative estimate of the true benefits that will be realised.

**5.1:1** \*  
BENEFIT-COST RATIO

---

**\$28.9**  
MILLION  
NET PRESENT VALUE

Two of the project investments involved identification of impacts that could not be valued in monetary terms. For these projects only the present value of costs was reported, with all other investment criteria appearing as NR (not reported).

Through the assessments, 52 impacts were identified as having been generated directly by the nine randomly selected projects. Economic and social impacts were grouped into the following five broad categories. Environmental impacts included reduced chemical use and increased water use efficiency.

## Economic impacts

**Increased yield and fruit quality** with improved pest control and more efficient production systems.

Example: *Extension AP05002: Alternaria fruit spot, new directions* (AP06007), resulted in reduced production losses associated with the incidence of Alternaria leaf blotch and fruit spot in Australian apple orchards. While *Profitable pears: maximising productivity and quality of new pear varieties* (AP12002), generated orchard management systems to increase average yield and fruit quality in pear orchards.

**Improved resource allocation in research.**

Example: *Apple and pear technical manager* (AP11014), resulted in more efficient deployment of R&D resources from the identification of knowledge gaps and new opportunities for investment, including avoidance of research duplication as well as new program planning, development and management.

**Maintained and/or enhanced market access.**

Example: *Apple and pear industry Asian export market development* (AP11023), resulted in increased profitability for apple and pear exporters as a result of increased Asian market access and improved import customer relationships. The project also made progress in securing future market access for mainland Australian apples in China.

## Social impacts

**Increased knowledge and scientific capacity.**

Sampled projects added to the skill sets of growers, local communities, allied industries and researchers.

Example: *Apple and pear industry leadership initiative* (AP12034 & AP15015), trained apple and pear growers who remained with the industry as well as those who contribute leadership to other industries, allied industries and the communities in which they live

**Productivity/profitability benefits having a flow-on effect to support improved community wellbeing in apple and pear growing areas.**

Projects that resulted in additional profitable apple and pear sales will generate flow-on income and employment opportunities in apple and pear growing areas.



**For full details of the impact assessments including detailed reports on each project, visit [www.horticulture.com.au/mt18009](http://www.horticulture.com.au/mt18009)**

\* Upper bound benefit cost ratio

# Reporting against the apple and pear Strategic Investment Plan 2017-2021

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.

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: Industry profitability and global competitiveness is improved by reducing the average cost per carton.</b>					
AP06007	Extension AP05002: Alternaria fruit spot, new directions	25.08	2.75	22.33	9.11
AP12029	Understanding apple and pear production systems in a changing environment	4.65	1.61	3.04	2.89
MT12000	Development of mass-trapping methods for codling moth females in disrupted orchards	0	1.59	NR	NR
<b>Strategic Investment Plan Outcome 2: Growing demand in both domestic and export markets has increased the value of the marketable harvest.</b>					
AP11023	Apple and pear industry Asian export market development	6.10	1.00	5.10	6.09
<b>Strategic Investment Plan Outcome 3: The value of the average bin has risen, resulting in improved industry profitability.</b>					
AP09035	Development of new pome fruit products	0	16.79	NR	NR
AP12002	Profitable Pears: Maximising productivity and quality of new pear varieties	6.22	3.56	2.66	1.75
<b>Strategic Investment Plan Outcome 4: A cultural shift across industry has better equipped growers for long term sustainability.</b>					
AP11014	Apple and pear technical manager	10.56	1.45	9.12	7.30
AP12034 AP15015	Apple and pear leadership initiative	2.02	0.73	1.29	2.75
AP12037	Apple and pear industry development initiative	3.62	0.59	3.03	6.17

## 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 2017/18 terms.
- **Present value of costs:** The discounted value of investment costs to 2017/18 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.