

Horticulture Impact Assessment Program: Appendix 13: Educational opportunities around perceptions of, and aversions to, vegetables through digital media (VG16018 Impact Assessment)

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Contents

Contents	3
Tables	3
Figures	3
Executive Summary	4
Keywords	4
Introduction	5
General Method	6
Background & Rationale	7
Project Details	8
Project Investment	10
Impacts	11
Valuation of Impacts	13
Results	15
Conclusion	18
Glossary of Economic Terms	19
Reference List	20
Acknowledgements	21
Abbreviations	21

Tables

Table 1: Australian Vegetable Production and Value 2014/15 to 2018/19	7
Table 2: Logical Framework for Project VG16018	8
Table 3: Annual Investment in Project VG16018 (nominal \$)	10
Table 4: Triple Bottom Line Categories of Principal Impacts from Project VG16018	11
Table 5: Australian Government Research Priorities	12
Table 6: Summary of Assumptions	13
Table 7: Investment Criteria for Total Investment in Project VG16018	15
Table 8: Sensitivity to Discount Rate	16
Table 9: Sensitivity to Share of Population Reached by VG16018	16
Table 10: Sensitivity to Increase in Vegetable Consumption Attribution of VG16018	16
Table 11: Confidence in Analysis of Project	17

Figures

Figure 1: Annual Cash Flow of Undiscounted Total Benefits and Total Investment Costs	15
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Executive Summary

What the report is about

This report presents the results of an impact assessment of a Horticulture Innovation Australia Limited (Hort Innovation) investment in *VG16018: Educational opportunities around perceptions of, and aversions to, vegetables through digital media*. The project was funded by Hort Innovation over the period September 2017 to April 2018.

Methodology

The investment was first analysed qualitatively within a logical framework that included activities and outputs, outcomes, and impacts. Actual and/or potential impacts then were categorised into a triple bottom line framework. Principal impacts identified were then considered for valuation in monetary terms (quantitative assessment). Past and future cash flows were expressed in 2019/20 dollar terms and were discounted to the year 2019/20 using a discount rate of 5% to estimate the investment criteria and a 5% reinvestment rate to estimate the modified internal rate of return (MIRR).

Results/key findings

The investment in VG16018 has generated an effective, widely adopted program that will increase the consumption of vegetables by children aged 8 to 12 years.

Investment Criteria

Total funding from all sources for the project was \$1.01 million (present value terms). The investment produced estimated total expected benefits of \$3.34 million (present value terms). This gave a net present value of \$2.33 million, an estimated benefit-cost ratio of 3.30 to 1, an internal rate of return of 17.9% and a MIRR of 9.2%.

Conclusions

While several social impacts identified were not valued, the impacts were considered uncertain and indirect compared with the impact valued. Nevertheless, combined with conservative assumptions for the impacts valued, investment criteria as provided by the valuation may be underestimates of the actual performance of the investment.

Keywords

Impact assessment, cost-benefit analysis, vegetable industry, education, phenomenon, children, health, teaching, resource, nutrition, Australian curriculum

Introduction

Horticulture Innovation Australia Limited (Hort Innovation) required a series of impact assessments to be carried out annually on a number of investments in the Hort Innovation research, development and extension (RD&E) portfolio. The assessments were required to meet the following Hort Innovation evaluation reporting requirements:

- Reporting against the Hort Innovation's current Strategic Plan and the Evaluation Framework associated with Hort Innovation's Statutory Funding Agreement with the Commonwealth Government.
- Annual Reporting to Hort Innovation stakeholders.
- Reporting to the Council of Rural Research and Development Corporations (CRRDC).

Under impact assessment program MT18011, the first series of impact assessments were conducted in 2019 and included 15 randomly selected Hort Innovation RD&E investments (projects). The second series of impact assessments (current series), undertaken in 2020, also included 15 randomly selected projects worth a total of approximately \$7.11 million (nominal Hort Innovation investment). The second series of projects were selected from an overall population of 85 Hort Innovation investments worth an estimated \$44.64 million (nominal Hort Innovation investment) where a final deliverable had been submitted in the 2018/19 financial year.

The 15 investments were selected through a stratified, random sampling process such that investments chosen represented at least 10% of the total Hort Innovation RD&E investment in the overall population (in nominal terms) and was representative of the Hort Innovation investment across six, pre-defined project size classes.

Project VG16018: Educational opportunities around perceptions of, and aversions to, vegetables through digital media was randomly selected as one of the 15 investments under MT18011 and was analysed in this report.

General Method

The impact assessment follows general evaluation guidelines that are now well entrenched within the Australian primary industry research sector including Research and Development Corporations, Cooperative Research Centres, State Departments of Agriculture, and some universities. The approach includes both qualitative and quantitative descriptions that are in accord with the impact assessment guidelines of the CRRDC (CRRDC, 2018).

The evaluation process involved identifying and briefly describing project objectives, activities and outputs, outcomes, and impacts. The principal economic, environmental, and social impacts were then summarised in a triple bottom line framework.

Some, but not all, of the impacts identified were then valued in monetary terms. Where impact valuation was exercised, the impact assessment uses cost-benefit analysis as its principal tool. The decision not to value certain impacts was due either to a shortage of necessary evidence/data, a high degree of uncertainty surrounding the potential impact, or the likely low relative significance of the impact compared to those that were valued. The impacts valued are therefore deemed to represent the principal benefits delivered by the project. However, as not all impacts were valued, the investment criteria reported for individual investments potentially represent an underestimate of the performance of that investment.

Background & Rationale

Background

The Australian vegetable industry is one of Australia's largest horticultural industries with a five year estimated annual production value of \$4.19 billion and a production volume of 3.6 million tonnes. Vegetable supply per capita, a proxy for vegetable consumption, stands at 87.9 kg – Table 1.

Table 1: Australian Vegetable Production and Value 2014/15 to 2018/19

Year Ended 30 June	Production (tonnes)	Supply per Capita (kg)	Gross Value of Production (\$m)	Farmgate Value of Production (\$m)
2015	3,514,125	N/a	3,786.5	3,597.2
2016	3,584,516	87.82	3,801.2	3,611.1
2017	3,502,673	86.73	4,291.6	4,077.0
2018	3,695,345	88.79	4,345.7	4,128.4
2019	3,722,378	88.09	4,722.1	4,486.0
Average	3,603,807	87.86	4,189.4	3,979.9

Source: Horticulture Statistics Handbook 2016/17 and 2018/19

Australian vegetable growers grow more than 130 different vegetable crops. The majority of growers are located in New South Wales, followed by Queensland and Victoria. The top three states by value of production are Queensland, Victoria, and South Australia.

The vegetable industry has a research and development (R&D) levy that is used for vegetable RD&E activities across a range of disciplines targeting both on-farm and supply chain sectors in accordance with industry priorities. The levy is collected on the majority of vegetable commodities, with exceptions of particular note being potato, onion, and tomato, and is matched by Hort Innovation with funding from the Australian Government. Some 1,676 growers pay the vegetable levy each year (Hort Innovation, 2017).

Vegetable R&D levy investment is guided by the Vegetable industry's Strategic Investment Plan (SIP). The current SIP has been driven by levy payers and addresses the Australian vegetable industry's needs from 2017 to 2021. Strategies and priorities in the Plan have been driven by a set of five desired outcomes (Hort Innovation, 2017):

1. Growth in the domestic market
2. Growth in export markets
3. Improved farm productivity
4. Increased levels of post-farmgate integration
5. Improved industry capabilities for adoption and innovation.

Rationale

Fresh vegetable consumption by children lags other groups in society. National Health Surveys show that only 5.4% of children in Australia are meeting the Australian Dietary Guidelines for serves of vegetables. Project Harvest (VG12078) showed that children are eating approximately 1.8 serves per day, well below the recommended guidelines. If children can be encouraged to consume more vegetables, they will set up life-long healthy eating patterns and ensure ongoing sales of Australian fresh vegetable.

This project builds on previous work funded by Hort Innovation including the CSIRO's 2015 investment plan to increase vegetable consumption by children (VG13090), CSIRO's Vegetable Education Project (VG15005) and Veggycation (VG15034). Other major vegetable education initiatives include kitchen garden programs such as Stephanie Alexander Kitchen Garden Foundation and skills-based initiatives such as Oz Harvest's Food Education and Sustainability Training and Jamie Oliver's Learn Your Fruit and Veg. While shown to be effective, most existing initiatives in food education relied on trained facilitators and/or require teachers and schools to make extra room in a curriculum that is often overcrowded. This project aimed to provide primary school teachers (teaching children aged 8 to 12) with education resources that could be integrated into existing classroom programs - Science and Technology, English, the Arts, Health and Physical Education, Maths and Humanities – with minimal demand for extra skills or time.

Project Details

Summary

<p>Project Code: VG16018</p> <p>Title: <i>Educational opportunities around perceptions of, and aversions to, vegetables through digital media</i></p> <p>Research Organisation: Edible Adventures Productions Pty Ltd</p> <p>Project Leader: Alice Zaslavsky</p> <p>Period of Funding: September 2017 to April 2018</p>

Objectives

The specific objectives of project VG16018 were:

1. To understand the perceptions of school-aged children (aged 8 to 12) to vegetables.
2. To develop digital food education resources to increase the education around and attitudes toward vegetables amongst children.

Logical Framework

Table 2 provides a detailed description of the project in a logical framework.

Table 2: Logical Framework for Project VG16018

Activities	<p>Major project activities included:</p> <ul style="list-style-type: none"> • Completion of a children and vegetables knowledge audit and qualitative research by project partner Colmar Brunton to provide a baseline for measurement of change. The research identified key topics, delivery formats and the need for a child-led approach. • A curriculum map was developed by project partner Four Elms Consulting. The map identified opportunities for vegetables to be integrated into the classroom via existing Australian curriculum codes. Knowledge garnered from the map informed lesson plans, activities, and education video pre-production. • Broadcast quality education videos were produced and project partner Love and Money developed branding, design, creative strategy, built a website and animation. • Communication of project assets was completed across nationwide print, online media (including News Corp and Fairfax), television and radio interviews (ABC News Breakfast, Channel 9 and Channel 10), social media, conference presentations (PIEFA, Hort Connections) and via key opinion leaders. The program was also selected as one of ten spotlight innovations in Victoria by global organisation HundrED, who discover research and share scalable innovations in K-12 education.
Outputs	<p>The important outputs of the project were:</p> <ul style="list-style-type: none"> • 25 vegetable education videos embedded on a dedicated website. • 50 downloadable PDF teaching resources suitable for children aged 8 to 12 consisting of activities and capsule lesson plans, each resource linked to one of the web videos. • A dedicated website to house the above outputs https://phenomenom.com.au/ • One long-form summary episode designed for inflight entertainment and screened on Qantas Inflight between September 2018 and February 2019. The episode achieved 400 hours of viewing per month with an average of 11 minutes per view (20 minute episode). • Material prepared confirmed an appetite in the media, the public and industry for new approaches to, and alternative avenues for, improving children's attitudes to vegetables.

	<ul style="list-style-type: none"> • Design and development of an innovative prototype for how vegetable education can be delivered by teachers, without special training or equipment, across multiple curriculum areas. • Outputs from the project targeted 37,000 primary school teachers – 5% of the national population, daily growth rates of between 3,000 and 5,000 and as of April 2020 outputs from the project accessible via ABC Education. ABC Education is the most trusted teaching resource platform in Australia.
Outcomes	<ul style="list-style-type: none"> • The project has the potential to shift children’s attitudes to vegetables, increase vegetable intake, sales, health, and wellbeing.
Impacts	<ul style="list-style-type: none"> • Economic – increased vegetable consumption by 8 to 12-year-old children resulting in additional profitable vegetable sales by Australian growers. • Social – children eating additional healthy vegetables, forming positive lifelong habits and reducing the costs of endemic diseases such as obesity and type 2 diabetes. • Capacity – researchers with a better understanding of what motivates children and the design of effective education programs. • Social – contribution to improved regional community wellbeing with more profitable vegetable growers and healthy school-aged children.

Project Investment

Nominal Investment

Table 3 shows the annual investment made in Project VG16018 by Hort Innovation. There were no other investors in the project.

Table 3: Annual Investment in Project VG16018 (nominal \$)

Year ended 30 June	HORT INNOVATION (\$)	OTHER (\$)	TOTAL (\$)
2018	782,133	0	782,133
Total	782,133	0	782,133

Source: VG16018 Executed Research Agreement

Program Management Costs

For the Hort Innovation investment the cost of managing the Hort Innovation funding was added to the Hort Innovation contribution for the project via a management cost multiplier (1.162). This multiplier was estimated based on the share of 'payments to suppliers and employees' in total Hort Innovation expenditure (3-year average) reported in the Hort Innovation's Statement of Cash Flows (Hort Innovation Annual Report, various years). This multiplier was then applied to the nominal investment by Hort Innovation shown in Table 3.

Real Investment and Extension Costs

For purposes of the investment analysis, the investment costs of all parties were expressed in 2019/20 dollar terms using the Implicit Price Deflator for Gross Domestic Product (ABS, 2020). No additional extension costs were incurred.

Impacts

Table 4 provides a summary of the principal types of impacts delivered by the project, based on the logical framework. Impacts have been categorised into economic, environmental and social impacts.

Table 4: Triple Bottom Line Categories of Principal Impacts from Project VG16018

Economic	<ul style="list-style-type: none"> Increased vegetable consumption by 8 to 12 year old children resulting in additional profitable vegetable sales by Australian growers.
Environmental	<ul style="list-style-type: none"> Nil
Social	<ul style="list-style-type: none"> Children eating additional healthy vegetables, forming positive lifelong habits and reducing the costs of endemic diseases such as obesity and type 2 diabetes. Researchers with a better understanding of what motivates children and the design of effective education programs. Contribution to improved regional community wellbeing with more profitable vegetable growers and healthy school-aged children.

Public versus Private Impacts

Impacts from investment in VG16018 will be both public and private in nature. Public benefits will be realised with any increase in vegetable consumption resulting in improved health outcomes. Private benefits will accrue to vegetable growers through increased profitable sales.

Distribution of Private Impacts

Economic benefits from an increase in profitable sales by vegetable growers will be shared along the supply chain with input suppliers (e.g. seed, chemical, fertiliser), transporters, wholesalers, retailers and consumers all benefiting. The share of benefit realised by each link in the supply chain will depend on both short- and long-term supply and demand elasticities in the fresh vegetable market.

Impacts on Other Australian Industries

If the strategy to increase vegetable consumption by children aged 8 to 12 is successful it will occur at the expense of other food suppliers e.g. those who supply protein for children's meals. Strategies developed to engage children and increase vegetable consumption could also be applied to the fruit, nut and unlevied vegetable industries.

Impacts Overseas

Videos and teaching resources will be applicable to vegetable industries in other countries especially those countries with similar cultures and attitudes e.g. New Zealand.

Match with National Priorities

The Australian Government's Science and Research Priorities and Rural RD&E priorities are reproduced in Table 5. The project outcomes and related impacts will contribute to Science and Research Priority 1 and 8.

Table 5: Australian Government Research Priorities

Australian Government	
Rural RD&E Priorities (est. 2015)	Science and Research Priorities (est. 2015)
<ol style="list-style-type: none"> 1. Advanced technology 2. Biosecurity 3. Soil, water and managing natural resources 4. Adoption of R&D 	<ol style="list-style-type: none"> 1. Food 2. Soil and Water 3. Transport 4. Cybersecurity 5. Energy and Resources 6. Manufacturing 7. Environmental Change 8. Health

Sources: (DAWR, 2015) and (OCS, 2015)

Alignment with the Vegetable Strategic Investment Plan 2017-2021

The strategic outcomes and strategies of the vegetable industry are outlined in the Vegetable Industry's Strategic Investment Plan 2017-2021¹ (Hort Innovation, 2017). Project VG16018 primarily addressed Outcome 1, Strategy 1.3 'improve stakeholder education for vegetables such as the identification and extension of the health benefits associated with vegetables'.

¹ For further information, see: <https://www.horticulture.com.au/hort-innovation/funding-consultation-and-investing/investment-documents/strategic-investment-plans/>

Valuation of Impacts

Impacts Valued

Analyses were undertaken for total benefits that included future expected benefits. A degree of conservatism was used when finalising assumptions, particularly when some uncertainty was involved. Sensitivity analyses were undertaken for those variables where there was greatest uncertainty or for those that were identified as key drivers of the investment criteria.

A single key impact was valued – increased vegetable consumption by 8 to 12-year-old children resulting in additional profitable vegetable sales by Australian growers.

Impacts Not Valued

Not all of the impacts identified in Table 4 could be valued in the assessment. The improved health impact could not be valued due to unclear links between the additional vegetable consumption and a reduction in endemic disease. Other social impacts were hard to value due to lack of evidence/data (i.e. increased researcher capacity) and the lack of a clear relationship between VG16018 and improved regional wellbeing.

Valuation of Impact: Increase in Profitable Sales for Vegetable Growers

The VG16018 investment provided high quality educational materials targeting primary school children and delivered via credible sources with national coverage. Research has shown that children in the 8 to 12 years age bracket consume an average of 1.8 serves of vegetables per day. The recommended daily intake for children of this age is between 2.2 and 2.5 serves per day (VG12078). Additional research (VG16008) has shown, that on average, people exposed to positive health messages increase their vegetable consumption by 0.5 serves per day. These data have been used to assess the potential for a shift in children’s attitudes to vegetables and a resultant increase in profitable vegetable sales by Australian growers.

Attribution

A 75% attribution factor has been assumed for VG16018’s contribution to increased vegetable consumption by school children aged 8 to 12 years. A high attribution factor has been assumed in recognition of the creation of unique education resources delivered through existing classroom programs – a successful innovation that has not been applied to other vegetable consumption programs.

Counterfactual

The scenario assumed if the investment had not been made is that it is 50% likely that similar investment would have been completed through another project.

Summary of Assumptions

A summary of the key assumptions made for valuation of the impacts is shown in Table 6.

Table 6: Summary of Assumptions

Variable	Assumption	Source/Comment
Impact 1: Increase in Profitable Vegetable Sales		
Number of Australian children aged 8 to 12 years (demographic targeted by VG16018).	1,500,000 children	Adapted from ABS Census 2016 QuickStats.
Share of population reached by VG16018 when the program is mature.	50%	VG16018 Final Report notes that 37,000 teachers, 5% of the national primary school teacher population, were targeted in the first year, daily growth rates of 3,000 to 5,000 students were realised and program materials have been made available nationally through ABC Education.
Share of population who	75%	Consultant estimate – not all school

increase their vegetable consumption when exposed to project educational material.		children targeted will be motivated or have opportunity to increase their vegetable consumption.
Increase in consumption following exposure to positive health messages.	0.5 serves/day (1.0 serve = 75 grams) 37.5 grams/day 13.7 kg/year	MT16008 <i>Consumption of juiced fruit and vegetables data analytics</i> showed that on average people exposed to positive health messages increase their vegetable consumption by 0.5 serves per day.
Grower profit on increased vegetable sales.	\$77.30/tonne	Farm gate value of vegetable production of \$3,980 million divide production of 3,603,807 tonnes to give a gross value of \$1,104/tonne (See Table 1). Typically, profit averages somewhere between 2% and 10% in established horticultural industries and 7% has been used in this analysis to reflect higher value crops covered by the vegetable levy.
Year of first impact.	2019/20	Consultant estimate that recognises immediate rollout of educational materials.
Year of maximum impact.	2021/22	Consultant estimate that recognises rapid take up rate by teachers.

Results

All costs and benefits were discounted to 2019/20 using a discount rate of 5%. A reinvestment rate of 5% was used for estimating the Modified Internal Rate of Return (MIRR). The base analysis used the best available estimates for each variable, notwithstanding a level of uncertainty for many of the estimates. All analyses ran for the length of the project investment period plus 30 years from the last year of investment (2017/18) as per the CRRDC Impact Assessment Guidelines (CRRDC, 2018).

Investment Criteria

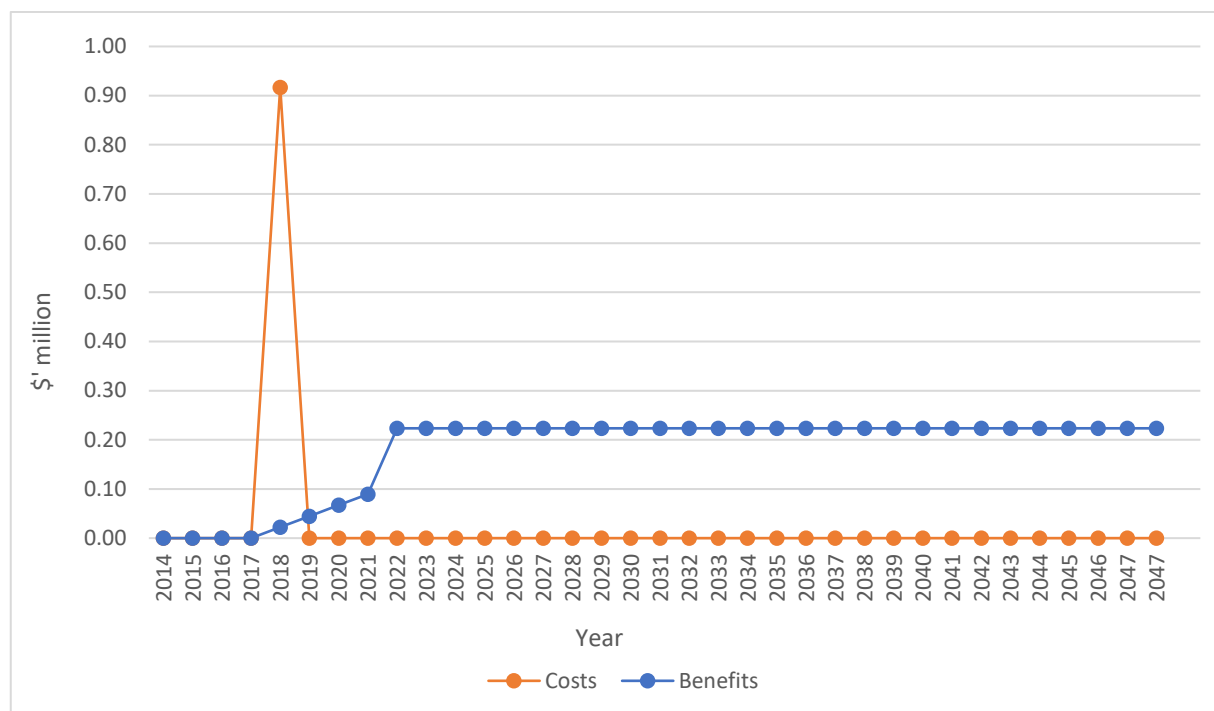
Tables 7 shows the investment criteria estimated for different periods of benefit for the total investment. Hort Innovation was the only contributor to this project so there is no second set of analyses showing results for Hort Innovation.

Table 7: Investment Criteria for Total Investment in Project VG16018

Investment Criteria	Years after Last Year of Investment						
	0	5	10	15	20	25	30
Present Value of Benefits (\$m)	0.02	0.62	1.45	2.11	2.62	3.02	3.34
Present Value of Costs (\$m)	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Net Present Value (\$m)	-0.99	-0.39	0.44	1.10	1.61	2.01	2.33
Benefit-Cost Ratio	0.02	0.61	1.44	2.09	2.59	2.99	3.30
Internal Rate of Return (%)	negative	negative	11.7	15.9	17.2	17.7	17.9
MIRR (%)	negative	negative	8.6	10.0	10.0	9.6	9.2

The annual undiscounted benefit and cost cash flows for the total investment for the duration of the VG16018 investment plus 30 years from the last year of investment are shown in Figure 2.

Figure 1: Annual Cash Flow of Undiscounted Total Benefits and Total Investment Costs



Sensitivity Analyses

A sensitivity analysis was carried out on the discount rate. The analysis was performed for the total investment and with benefits taken over the life of the investment plus 30 years from the last year of investment. All other parameters were held at their base values. Table 8 presents the results. The results show a moderate sensitivity to the discount rate.

Table 8: Sensitivity to Discount Rate (Total investment, 30 years)

Investment Criteria	Discount rate		
	0%	5% (base)	10%
Present Value of Benefits (\$m)	6.25	3.34	2.10
Present Value of Costs (\$m)	0.92	1.01	1.11
Net Present Value (\$m)	5.34	2.33	0.99
Benefit-cost ratio	6.82	3.30	1.89

A sensitivity analysis was then undertaken for the share of 8 to 12 year old children reached by the program. Results are provided in Table 9. Even when share of children reached is halved, and given all other assumptions remaining unchanged, the project returns a favourable benefit cost ratio.

Table 9: Sensitivity to Share of Population Reached by VG16018
(Total investment, 30 years)

Investment Criteria	Share of 8 to 12 Year Old Children Reached by VG16018		
	25%	50%	75%
Present Value of Benefits (\$m)	1.67	3.34	5.01
Present Value of Costs (\$m)	1.01	1.01	1.01
Net Present Value (\$m)	0.66	2.33	4.00
Benefit-cost ratio	1.65	3.30	4.96

A final sensitivity analysis tested the sensitivity of the investment criteria to the increase in vegetable consumption realised. The results (Table 10) show that even if increase in serves of vegetables is a modest 0.2 serves per day, the project investment would breakeven.

Table 10: Sensitivity to Increase in Vegetable Consumption Attribution of VG16018
(Total investment, 30 years)

Investment Criteria	Increase in Vegetable Consumption by 8 to 12 year olds		
	0.2 serves	0.25 serves	0.5 serves (base)
Present Value of Benefits (\$m)	1.34	1.67	3.34
Present Value of Costs (\$m)	1.01	1.01	1.01
Net Present Value (\$m)	0.32	0.66	2.33
Benefit-cost ratio	1.32	1.65	3.30

Confidence Rating

The results produced are highly dependent on the assumptions made, some of which are uncertain. There are two factors that warrant recognition. The first factor is the coverage of benefits. Where there are multiple types of benefits it is often not possible to quantify all the benefits that may be linked to the investment. The second factor involves uncertainty regarding the assumptions made, including the linkage between the research and the assumed outcomes.

A confidence rating based on these two factors has been given to the results of the investment analysis (Table 12). The rating categories used are High, Medium and Low, where:

- High: denotes a good coverage of benefits or reasonable confidence in the assumptions made
- Medium: denotes only a reasonable coverage of benefits or some uncertainties in assumptions made
- Low: denotes a poor coverage of benefits or many uncertainties in assumptions made

Table 11: Confidence in Analysis of Project

Coverage of Benefits	Confidence in Assumptions
Medium	Medium

Coverage of benefits valued was assessed as Medium a key impact was valued – increased vegetable consumption by 8 to 12-year-old children. However, other benefits including associated health outcomes were not quantified. Confidence in assumptions was rated as Medium, most data used came from credible sources.

Conclusion

The investment in VG16018 has generated an effective, widely adopted program that will increase the consumption of vegetables by children aged 8 to 12 years.

Total funding from all sources for the project was \$1.01 million (present value terms). The investment produced estimated total expected benefits of \$3.34 million (present value terms). This gave a net present value of \$2.33 million, an estimated benefit-cost ratio of 3.30 to 1, an internal rate of return of 17.9% and a modified internal rate of return of 9.2%.

As several social impacts identified were not valued, the investment criteria estimated by the evaluation may be underestimates of the actual performance of the investment.

Glossary of Economic Terms

Cost-benefit analysis:	A conceptual framework for the economic evaluation of projects and programs in the public sector. It differs from a financial appraisal or evaluation in that it considers all gains (benefits) and losses (costs), regardless of to whom they accrue.
Benefit-cost ratio:	The ratio of the present value of investment benefits to the present value of investment costs.
Discounting:	The process of relating the costs and benefits of an investment to a base year using a stated discount rate.
Internal rate of return:	The discount rate at which an investment has a net present value of zero, i.e. where present value of benefits = present value of costs.
Investment criteria:	Measures of the economic worth of an investment such as Net Present Value, Benefit-Cost Ratio, and Internal Rate of Return.
Modified internal rate of return:	The internal rate of return of an investment that is modified so that the cash inflows from an investment are re-invested at the rate of the cost of capital (the re-investment rate).
Net present value:	The discounted value of the benefits of an investment less the discounted value of the costs, i.e. present value of benefits - present value of costs.
Present value of benefits:	The discounted value of benefits.
Present value of costs:	The discounted value of investment costs.

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Abbreviations

CRRDC	Council of Research and Development Corporations
DAWR	Department of Agriculture and Water Resources (Australian Government)
GDP	Gross Domestic Product
GVP	Gross Value of Production
IRR	Internal Rate of Return
MIRR	Modified Internal Rate of Return
OCS	Office of Chief Scientist Queensland
PIEFA	Primary Industries Education Foundation Australia
PVB	Present Value of Benefits
RD&E	Research, Development and Extension