Final Report

AMPC
AUSTRALIAN MEAT PROCESSOR CORPORATION

Aggregated analysis of economic impacts from AMPC research projects 2019-2025

Project code
2025-1068

Prepared by
GHD Pty Ltd

Date submitted
20/11/25

Published by
AMPC

Date published
20/11/25

Contents

Figure Index

Table Index

Acknowledgements

AMPC and GHD would like to acknowledge the various researchers and industry stakeholders consulted for this project.

Abbreviations

AMIC	Australian Meat Industry Council
AMPC	Australian Meat Processor Corporation
BCR	Benefit Cost Ratio
CRRDC	Council of Rural Research and Development Corporations
DAFF	Department of Agriculture, Fisheries and Forestry
GDP	Gross Domestic Product
IRR	Internal Rate of Return
MIRR	Modified Internal Rate of Return
MLA	Meat & Livestock Australia
NPV	Net Present Value
R&D	Research and Development
RD&E	Research, Development and Extension
RDC	Research and Development Corporation
RMAC	Red Meat Advisory Council
SLO	Social Licence to Operate
VR	Virtual Reality

1.0 Executive summary

This report presents an aggregate analysis of 60 economic impact assessments of projects funded by the Australian Meat Processor Corporation (AMPC) and completed between 2019/20 and 2024/25. The analysis draws on six years of independent ex-post evaluations conducted by GHD, providing a comprehensive view of the return on investment and broader industry benefits delivered through AMPC's core research, development and evaluation (RD&E) portfolio.

Overall economic impact

In aggregate, AMPC invested approximately $20.8 million in the projects assessed, representing 34% of its total investment in core projects completed across the six-year period. Through the completion of the annual impact assessments, it was found that the project investments consistently delivered strong economic returns, with weighted average Benefit Cost Ratios (BCRs) ranging from 5.1 to 8.7, with an overall weighted average return of 6.2, as presented in Figure 1.

These results are in line with, or exceed, Rural Research and Development Corporation (RDC) benchmarks and confirm the value of AMPC's investments to levy payers and the broader Australian community.

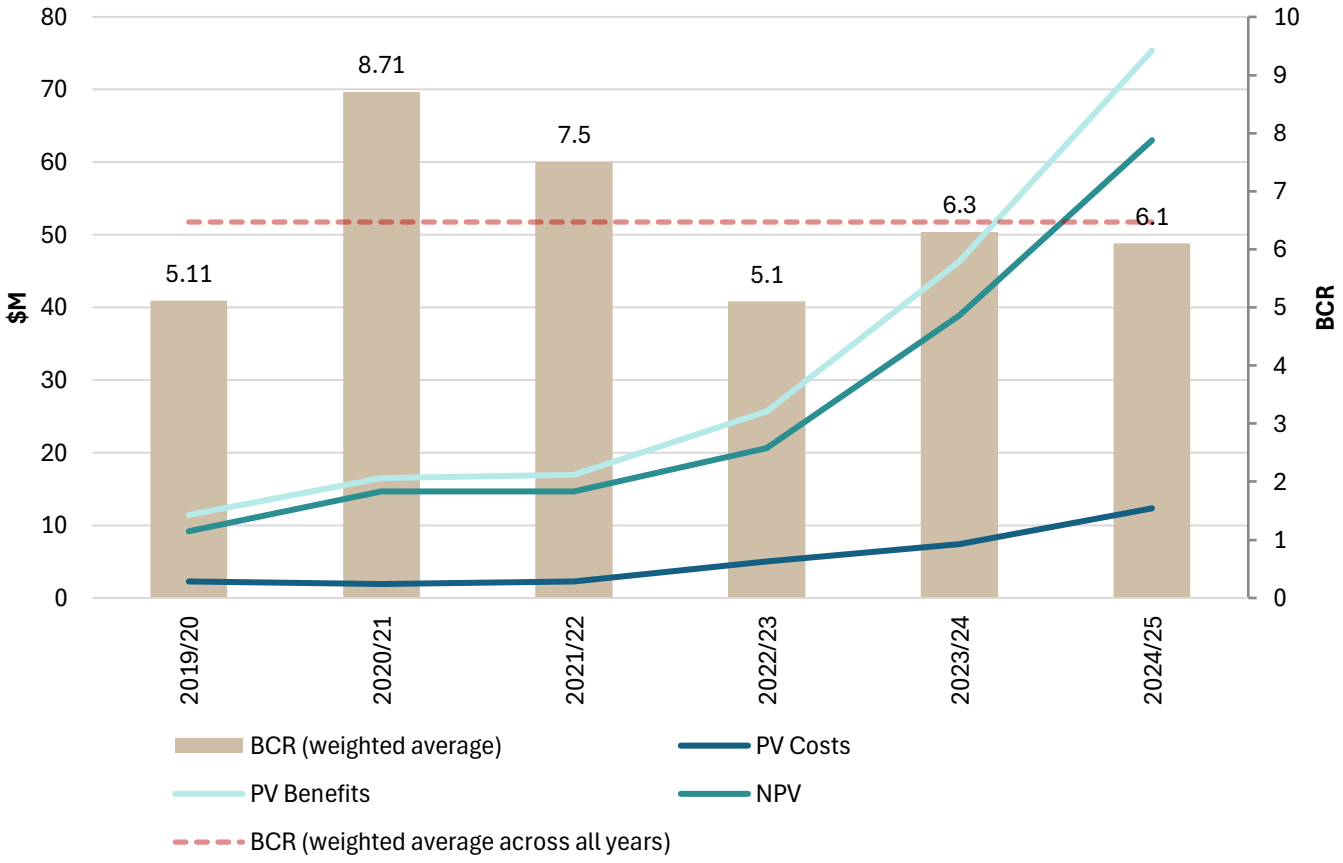

Figure 1 Economic impacts (BCR, PV Costs, PV Benefits, NPV) aggregated across all projects and years (PV Costs, PV Benefits and NPV are plotted against the left vertical axis and BCR is plotted against the right vertical axis)

Triple bottom line impacts

As outlined in Table 1 below, the analysis also highlights increasing contributions from AMPC investments to environmental and social outcomes, with 60% of projects delivering environmental benefits and 75% contributing to social impacts. Further, all projects assessed demonstrated alignment with at least one Australian Government RD&E priority, with particularly strong alignment to digital agriculture, climate resilience, and trusted exporter of premium food outcomes.

Table 1 Triple bottom line aggregate impacts

Impacts	Common Themes	Occurrence	Examples
Economic	Cost savings, productivity gains, reduced waste, improved yield, avoided regulatory costs, increased market access	**100%** of projects	◆ Reduced training costs (virtual reality (VR) modules) ◆ Premiums from improved grading (MEQ probe) ◆ Avoided landfill fees (plastics diversion) ◆ Reduced admin and export rejections (Meat Messaging)
Environmental	Energy efficiency, waste reduction, emissions avoidance, improved resource use	**60%** of projects	◆ Reduced energy use via better grading and cooling systems ◆ Diverted plastics from landfill ◆ Reduced food and packaging waste from export rejections
Social	Improved training, wellbeing, community perception, workforce diversity, social licence to operate	**75%** of projects	◆ VR training improving safety and accessibility ◆ Careers portal supporting youth and women in trades ◆ More to Meat campaign enhancing public trust and industry reputation ◆ AI systems improving animal welfare and transparency

Economic impact by program stream

Table 2 provides a breakdown of the PV Costs, PV Benefits, NPV and weighted average BCR across the impact assessments by program stream. This analysis has been completed based on the individual project/cluster impact assessments completed from 2020/21 to 2024/25, i.e. during the period of the AMPC Strategic Plan 2020–2025 (Australian Meat Processor Corporation, 2020).

The weighted average BCRs by program stream ranged from 5.1 for projects aligned with the Product & Process Integrity program to 7.3 for Advanced manufacturing.

Table 2 Results from annual impact assessments (30 years, 5% discount rate)

Program Stream	PV Cost ($m)	PV Benefits ($m)	NPV	BCR
Advanced Manufacturing	$9.24	$67.33	$58.09	7.3
Sustainability	$3.42	$20.85	$17.43	6.1
Product & Process Integrity	$4.68	$23.92	$19.24	5.1
People & Culture	$2.02	$10.64	$8.62	5.3
Technical Market Access & Markets	$9.56	$58.06	$48.50	6.1

Across all years, high-level findings in the modelling consistently demonstrated that most benefits from project investments will be realised within five to ten years of project completion. This is typical of rural RD&E as innovations often take up to five years to become fully developed and adopted. After 10 years, many innovations are likely to be superseded, or similar outcomes achieved, under the counterfactual scenario.

To demonstrate this point, the accumulation of benefits and costs from all 60 of the selected projects/clusters is presented in Figure 2. It is important to note that this presentation is for illustrative purposes only, as it presents the aggregate results from all impact assessments for year 0 to year 30 irrespective of whether year 0 was 2019/20 or 2024/25 for example.

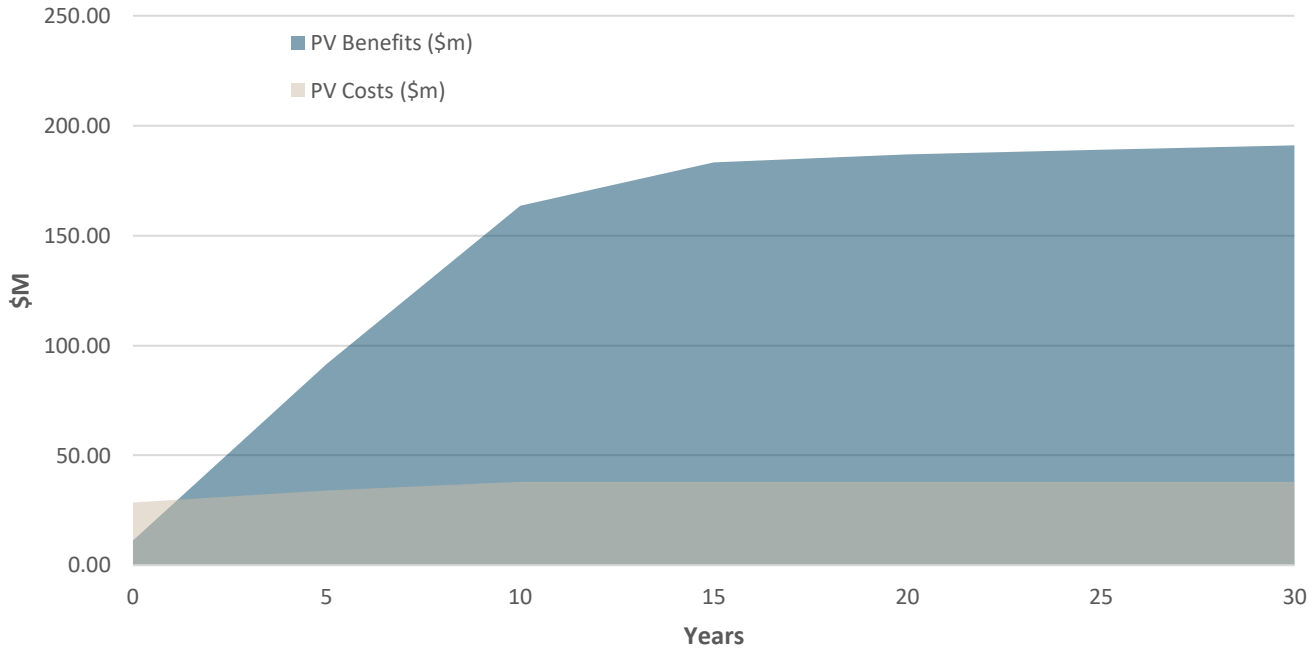

Figure 2 Accumulation of benefits and costs over time

Recommendations

The findings from the aggregate analysis of 60 economic impact assessments of projects funded by AMPC provides a robust evidence base to inform AMPC's future investment planning, support industry adoption, and enhance public confidence in the sector's innovation and sustainability efforts.

Based on insights provided from this analysis, it is recommended that AMPC:

- Continue to invest in projects that align with its strategic objectives and National Agricultural Innovation Priorities
- Look to strengthen opportunities for co-investment and partnerships with industry, government and technology providers
- Continue to invest in projects that deliver benefits across the triple bottom line
- Continue to ensure that processors, service providers and other key stakeholders are engaged early to ensure relevance and support adoption pathways
- Strengthen the impact assessment process by ensuring all projects define the pathway to impact and collect necessary supporting data, including on adoption and triple bottom line impacts, and consider undertaking more impact assessments at the program and/or cluster level
- Leverage data and information generated through the impact assessment process for strategic communications to both support industry adoption and enhance public trust and social licence.

2.0 Introduction

2.1 Background

Australian Meat Processor Corporation (AMPC) is the Rural Research and Development Corporation (Rural RDC) for the Australian red meat processing industry, supporting targeted investments in research, development and extension (RD&E). For each financial year from 2019/20 to 2024/25, GHD conducted ex-post economic impact assessments on a representative sample of AMPC's core RD&E investments.

Annual economic impact assessments were conducted to:

1. Provide an assessment, in line with the *Council of Rural Research and Development Corporations (CRDC) Impact Assessment Program: Guidelines* (2018), of a representative sample of AMPC investments completed between 1 July and 30 June of each financial year
2. Collect, on behalf of AMPC, relevant industry data to support an understanding of industry issues, and the delivery of future investments
3. Identify and analyse key drivers of investment success, including investment outputs, industry awareness, industry adoption, cost of adoption, adoption benefit and benefit attribution
4. Identify and analyse key lessons learned for future investments
5. Identify and outline key messages relevant for service providers, AMPC members and key stakeholder groups (including Meat & Livestock Australia (MLA), Australian Meat Industry Council (AMIC), Red Meat Advisory Council (RMAC), and the Australian Government.

This summary report provides an aggregated analysis of the 6 years of ex-post economic impact assessments conducted.

2.2 Project objectives

The objective of this aggregated analysis of independent ex-post economic impact assessments completed by GHD over the period 2019/20 to 2024/25 is to provide an outline of:

- Total expected benefits and costs of the assessed projects by year and in aggregate
- The range and occurrence of triple bottom line impacts identified
- Alignment of projects sampled by year and in aggregate with Australian Government priorities
- Insights into key factors influencing project success
- Recommendations for any areas of improvement.

3.0 Methodology

3.1 Economic impact evaluation

Annual economic impact assessments were completed on a representative sample of AMPC's project investments for the respective financial year. Projects were selected independently by GHD from a long-list of AMPC's core project investments completed in the financial year. After excluding projects not suitable for impact assessment (e.g. projects with investment below a certain level or non-R&D projects), GHD selected projects using a stratified random sampling approach to ensure representation across AMPC's key program streams.

As per the *CRRDC Impact Assessment Program: Guidelines* (2018) GHD considered and modelled the project case (with project scenario) against the counterfactual (without project scenario) to determine the likely change in net economic benefit and, therefore, return on investment.

GHD reviewed project reports and outputs, and consulted with key stakeholders, to determine reasonable assumptions for the following:

- Potential impact if/when project outputs and findings are utilised by industry
- Likely rates of adoption over the coming years (adoption profile)
- Attribution of benefits, i.e. the extent realised benefits are attributable to the project investment, as separate from previous related research, future implementation costs and other factors.

The base analysis used the best available estimates for each variable, notwithstanding a high level of uncertainty for many of the estimates. Impacts were modelled over a 30 year timeline and discounted to present day amounts (applying a 5% discount rate) to determine the:

- Net Present Value of Benefits (NPV): Net benefits minus net costs
- Benefit Cost Ratio (BCR): Net benefits divided by net costs
- Internal Rate of Return (IRR): Interest rate at which the NPV of all the impacts from a project (both costs and benefits) or investment equal zero
- Modified Internal Rate of Return (MIRR): Similar to the above IRR, but assuming more realistic returns from reinvested benefits and financing of initial outlays (5% applied for both, as per CRRDC Guidelines).

Sensitivity analysis was used to test results against changes to key assumptions and discount rates, for both individual projects and aggregate results. For each evaluation GHD also specified confidence ratings in terms of coverage of benefits and accuracy of assumptions.

3.2 Aggregate analysis

Over the period from 2019/20 to 2024/25, GHD assessed a total of 70 project investments clustered into 60 individual ex-post impact assessments. These assessments were reported via annual ex-post economic impact assessment reports for each financial year. Raw data from these reports was extracted and structured in Excel to enable aggregate analysis across all years and projects.

4.0 Results

4.1 Project investment

Over the period from 2019/20 to 2024/25, GHD assessed a total of 70 project investments clustered into 60 individual ex-post impact assessments. As shown in Table 3, the total selection of projects for evaluation over the six-year period had a combined AMPC investment (excluding overheads) of $20.8 million, which represented approximately 34% of AMPC's total investment into core projects over the period.

*Table 3 Aggregated project budgets per year (*Excluding overheads)*

Year	Project Selection*	AMPC Budget	% of Budget Covered
2019/20	$1,781,136	$7,130,831	25%
2020/21	$1,697,068	$4,637,807	37%
2021/22	$2,028,296	$11,931,156	17%
2022/23	$3,435,740	$17,100,000	20%
2023/24	$3,364,372	$6,510,000	52%
2024/25	$8,521,318	$14,599,234	58%
Totals	**$20,827,931**	**$61,909,028**	**34%**

Co-investment, in the form of cash or in-kind contributions were received for 13 of the 60 project clusters. As can be seen in Table 4, co-investment contributions made up just under 20% of the total budgets for the projects assessed over the period.

*Table 4 Sampled projects co-investment (*Excluding overheads)*

Year	AMPC investment*	Co-investment	% of Co-investment	Total Budget
2019/20	$1,781,136	$182,635	9%	$1,963,771
2020/21	$1,697,068	$0	0%	$1,697,068
2021/22	$2,028,296	$0	0%	$2,028,296
2022/23	$3,435,740	$970,000	22%	$4,405,740
2023/24	$3,364,372	$3,357,450	50%	$6,721,822
2024/25	$8,521,318	$382,745	4%	$8,904,063
Totals	**$20,827,931**	**$4,892,830**	**19%**	**$25,720,761**

For the purposes of conducting the benefit cost analyses, the AMPC project investment costs were multiplied by a factor of 1.1 to accommodate project management costs.

As shown in Figure 3, the sample of projects within the 2024/25 financial year had the largest project costs (including overheads) across all 6 years at $9.37 million, largely impacted by the selection of the *Red Meat Processing National Campaign – More to Meat (Phases 1, 2 and 3)* project cluster.

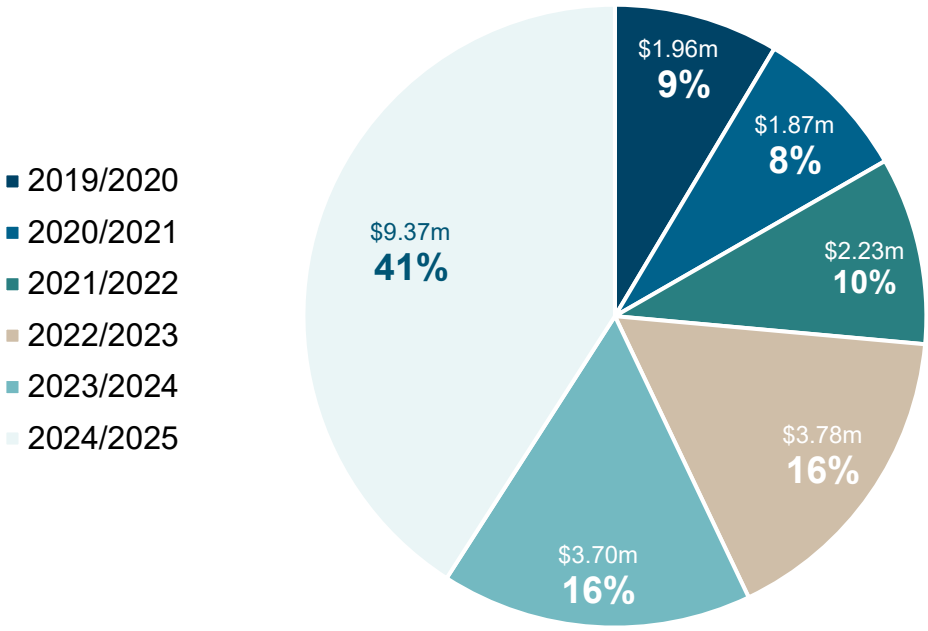

Figure 3 Aggregated project budget per financial year

4.2 Strategic alignment to AMPC program streams

The AMPC Strategic Plan 2020–2025 (Australian Meat Processor Corporation, 2020) outlined a comprehensive approach to RD&E and was structured around five key program streams designed to drive innovation and value for Australia's red meat processing industry:

- Advanced Manufacturing
- Sustainability
- People & Culture
- Technical Market Access & Markets
- Product & Process Integrity.

From year 2020/21, assessed projects have been aligned under AMPC's Strategic Plan 2020–2025 program streams. Figure 4 illustrates the number of individual projects aligned to Advanced Manufacturing (15), Sustainability (14), Product & Process Integrity (12), Technical Market Access & Markets (10) and People & Culture (9).

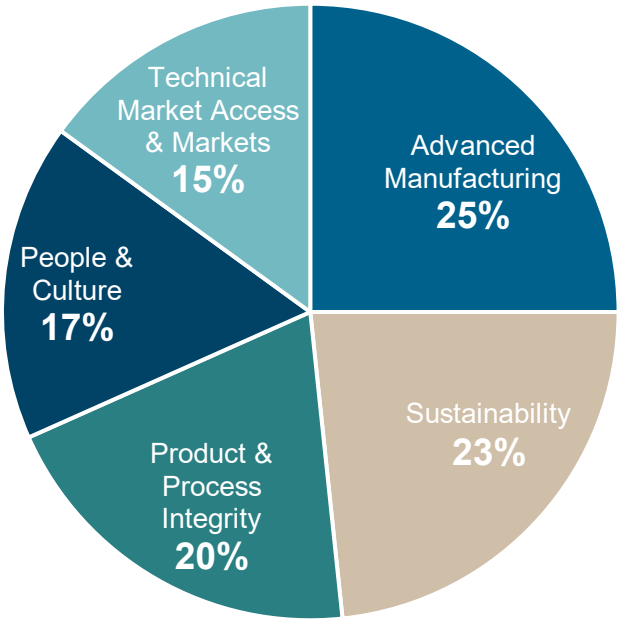

Figure 4 Assessed projects against AMPC program streams 2020-2025

While the project selection, i.e. number of projects, was relatively balanced across program streams, AMPC's financial investment (inclusive of overheads) across the projects evaluated was more heavily weighted toward Technical Market Access & Markets (33%) and Advanced Manufacturing (29%), shown below in Figure 5.

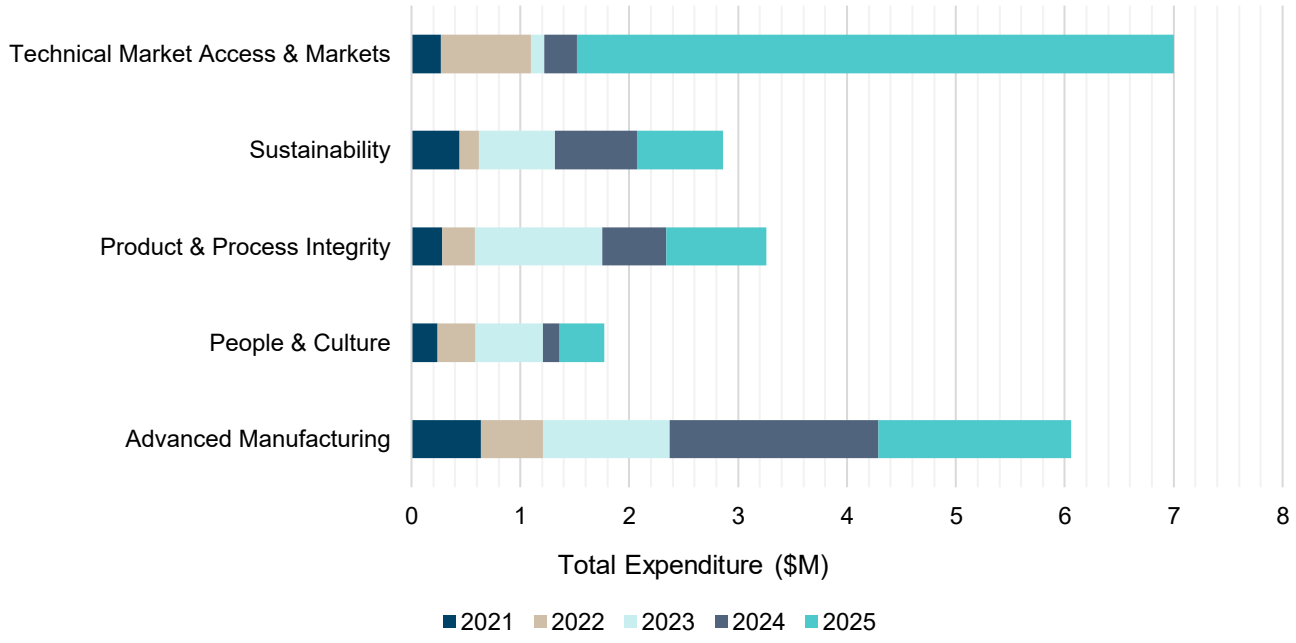

Figure 5 Project investment across all years aligned to AMPC 2020-2025 program streams

In 2019/2020 reporting, projects were aligned with AMPC's former Strategic Plan (2018-2022) (Australian Meat Processor Corporation, 2018), which arranged projects under six sub-programs: Processing Technologies (2), Environment and Sustainability (2), Processing Hygiene, Product Integrity and Meat Science (2), Capability, Extension and Education (2), Industry Improvement and Economic Analysis (1)

and Joint Industry Program (1). Corresponding expenditure against the six sub-programs in the 2018-2022 plan is shown in Figure 6.

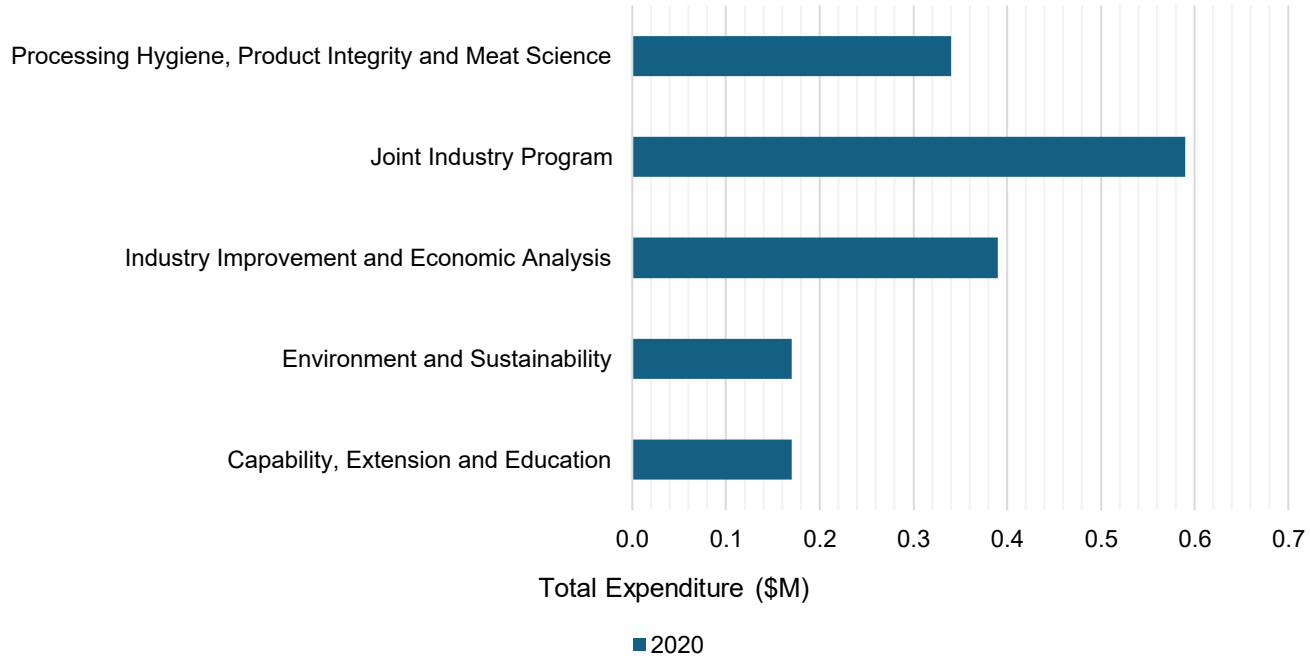

Figure 6 Project investment in FY 2019-2020 aligned to AMPC 2018-2022 program streams

4.3 Economic impact

Economic impact by year

In all years, the PV of benefits aggregated across the individual project/cluster impact assessments exceeded the PV of costs, resulting in positive NPVs and favourable weighted average BCRs.

The highest weighted average BCR across the projects assessed occurred in 2020/21 (8.7), while 2019/20 and 2022/23 both recorded a weighted average BCR of 5.1.

Table 5 Results from annual impact assessments (30 years, 5% discount rate)

Year	PV Cost ($m)	PV Benefits ($m)	NPV	BCR
2019/20	$2.23	$11.43	$9.19	5.1
2020/21	$1.90	$16.53	$14.63	8.7
2021/22	$2.26	$16.94	$14.69	7.5
2022/23	$5.01	$25.69	$20.67	5.1
2023/24	$7.37	$46.29	$38.85	6.3
2024/25	$12.35	$75.35	$63.01	6.1

Sensitivity analysis

Table 6 shows how the overall economic impact results would change based on changes in the discount rate. Results show that weighted average BCR results remain favourable under all rates tested. Sensitivity analyses were undertaken for individual projects assessments in all annual reports, adjusting discount rates along with other key input assumptions. These results are detailed in each individual report's appendices.

Table 6 Sensitivity analyses aggregated across all years and all projects

Discount Rate		1%	3%	5%	7%	9%
2019-2020	NPV ($M)	11.73	10.37	9.19	8.17	7.28
	BCR	6.25	5.64	5.11	4.66	4.26
2020-2021	NPV ($M)	20.59	17.31	14.63	12.41	10.56
	BCR	11.85	10.12	8.71	7.54	6.56
2021-2022	NPV ($M)	19.26	16.33	14.69	13.25	11.41
	BCR	9.5	8.2	7.5	6.9	6.1
2022-2023	NPV ($M)	31.5	24.44	20.67	17.51	13.63
	BCR	7.3	5.9	5.1	4.5	3.7
2023-2024	NPV ($M)	62.31	46.81	38.85	32.3	24.48
	BCR	9.5	7.4	6.3	5.4	4.4
2024-2025	NPV ($M)	93.02	72.68	63.01	54.74	46.63
	BCR	8.5	6.9	6.1	5.5	4.8

Economic impact by program stream

Table 7 provides a breakdown of the PV Costs, PV Benefits, NPV and weighted average BCR across the impact assessments by program stream. This analysis has been completed based on the individual project/cluster impact assessments completed from 2020/21 to 2024/25, i.e. during the period of the AMPC Strategic Plan 2020–2025 (Australian Meat Processor Corporation, 2020).

The weighted average BCRs by program stream ranged from 5.1 for projects aligned with the Product & Process Integrity program to 7.3 for Advanced manufacturing.

Table 7 Results from annual impact assessments (30 years, 5% discount rate)

Program Stream	PV Cost ($m)	PV Benefits ($m)	NPV	BCR
Advanced Manufacturing	$9.24	$67.33	$58.09	7.3
Sustainability	$3.42	$20.85	$17.43	6.1
Product & Process Integrity	$4.68	$23.92	$19.24	5.1
People & Culture	$2.02	$10.64	$8.62	5.3
Technical Market Access & Markets	$9.56	$58.06	$48.50	6.1

Figure 7 provides a further breakdown of the weighted average BCR for each program stream by year.

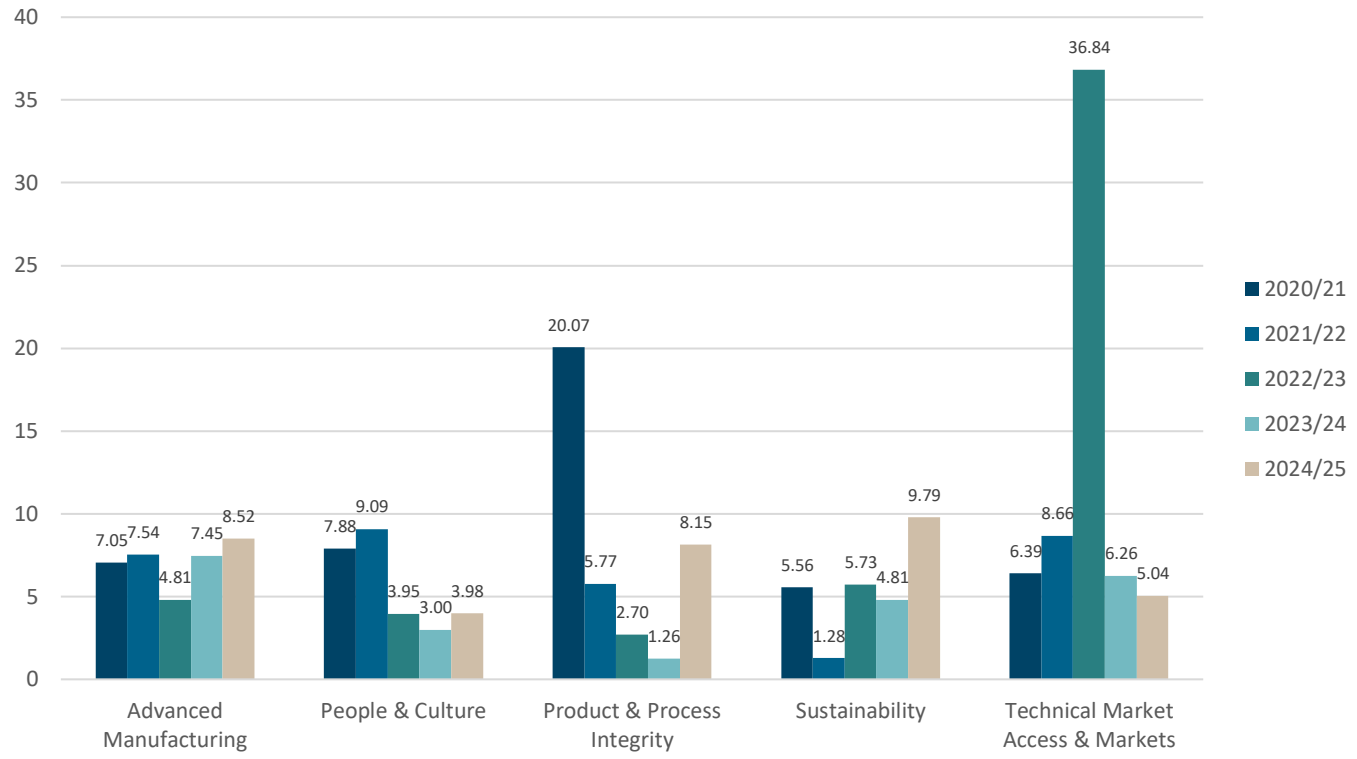

Figure 7 Weighted average BCRs by program streams based on impact assessments completed from 2020/21 to 2024/25

Economic impact by project

The results for all but one of the 60 individual project/cluster assessment across the six-year period delivered BCRs greater than 1.0, which means that in the main, project investments were sound, with benefits outweighing costs. Table 8 shows the range of BCRs within each year, and their variability, with 2022/23 being the most variable ranging from 0.6 to 35.9. Examples of the highest performing projects in each year are provided below. Figure 8 below provides a summary of the top ranked projects in each year. The full list of projects showing PV Costs, PV Benefits and BCR results is provided in **Appendix 1**.

Table 8 Lowest and highest BCRs within each year

Year	Lowest BCR	Highest BCR	St. Dev.
2019/20	1.52	15.1	4.69
2020/21	2.8	22.5	5.86
2021/22	1.3	12.7	3.67
2022/23	0.6	35.9	10.36
2023/24	1.3	7.8	2.43
2024/25	1.2	19.7	6.34

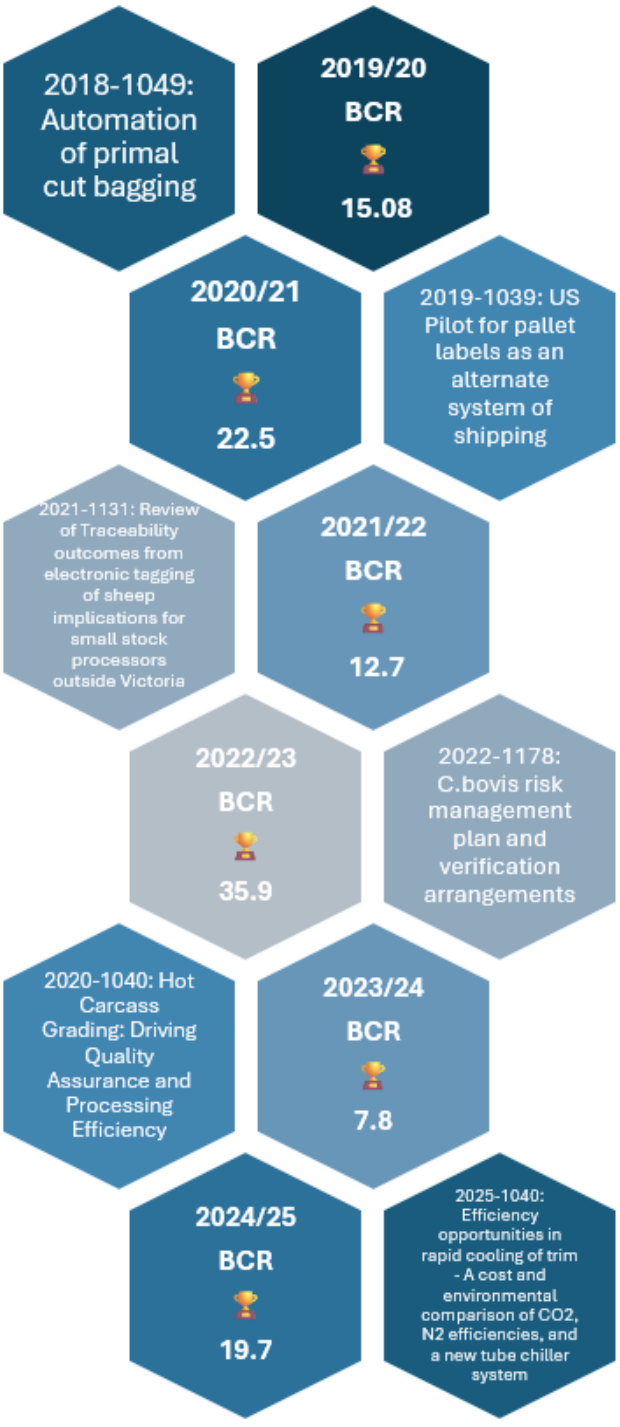

Figure 8 Highest performing projects by year

The highest BCR was ***2022-1178: C.bovis risk management plan and verification arrangements*** with a 35.9 BCR, meaning that net benefits exceed the net costs by nearly 36 times. The project, under Technical Market Access & Markets stream, proved that *C. bovis* in cattle can be effectively monitored at a lower cost, without adverse effects on public health, increasing value of beef cheeks and reducing food waste and inspection costs.

Project, ***2018-1049: Automation of primal bag cutting***, part of the Processing Technologies stream, explored opportunities to fully automate the process of primal cut bagging, thereby reducing production costs and improving quality.

2019-1039: US pilot for pallet labels as an alternate system of shipping developed a pilot protocol that could minimise the amount of Australian red meat wasted during export into the US due to non-compliance in label or shipping mark. ***2021-1131: Review of traceability outcomes from electronic tagging of sheep - implications for small stock processors outside Victoria***, aimed to assess the success of the Victorian model and determine its potential for adoption by other states. Both projects were under the Product Process and Integrity stream.

The project ***2020-1040: Hot Carcass Grading: Driving Quality Assurance and Processing Efficiency***, part of the Advanced Manufacturing stream, developed real-time, accurate, and objective grading tools for beef and lamb carcasses.

In 2025, under the Sustainability streamline, project ***2025-1040: Efficiency opportunities in rapid cooling of trim - A cost and environmental comparison of CO2, N2 efficiencies, and a new tube chiller system*** conducted a comprehensive evaluation of rapid cooling technologies used in the meat processing industry, focusing on the cooling of meat trim.

Overall economic impact

Figure 9 presents the overall economic impacts estimated across all years (2019/20 to 2024/25).

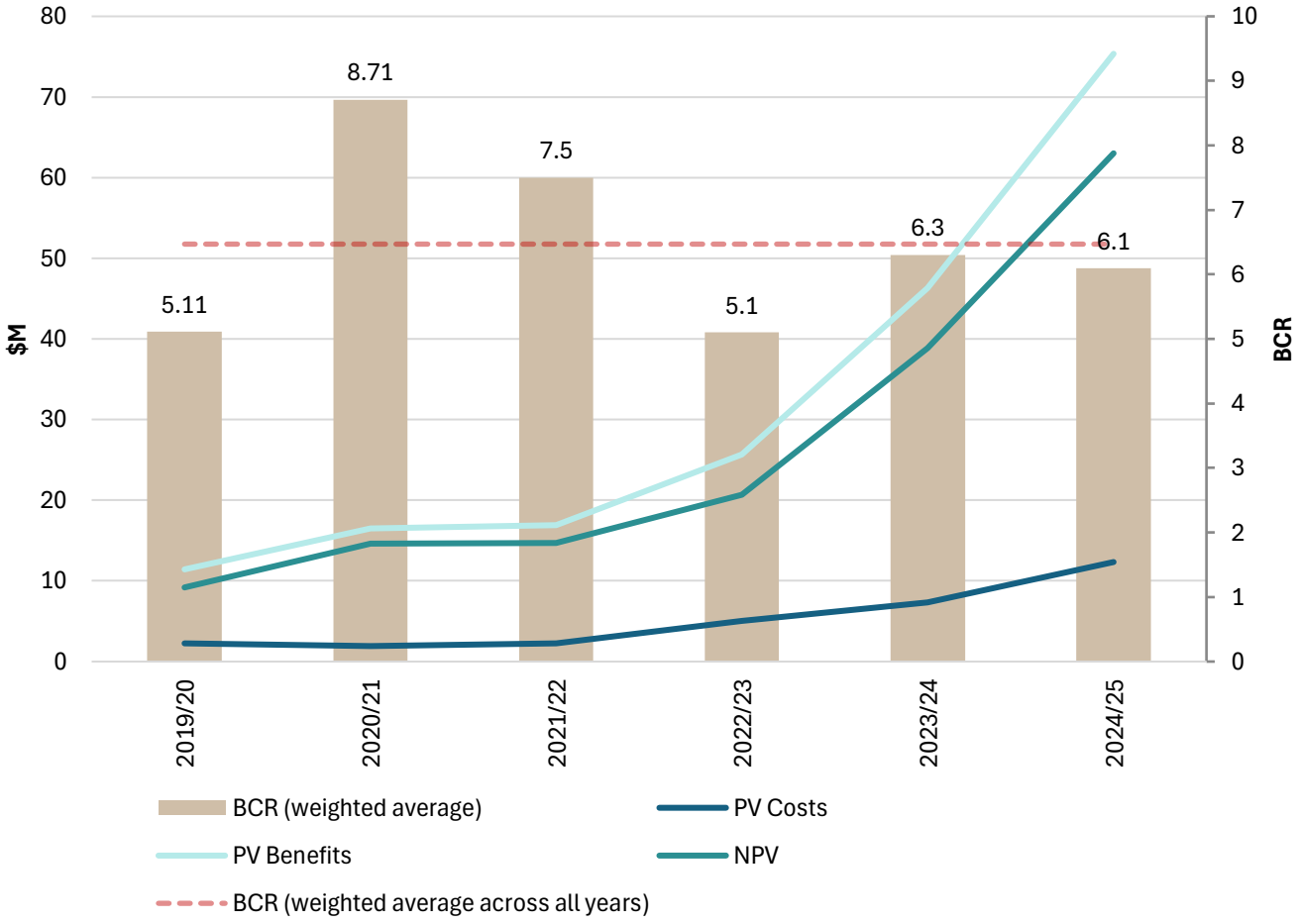

Figure 9 Economic impacts (BCR, PV Costs, PV Benefits, NPV) aggregated across all projects and years (PV Costs, PV Benefits and NPV are plotted against the left vertical axis and BCR is plotted against the right vertical axis)

Across all years, high-level findings in the modelling consistently demonstrated that most benefits from project investments will be realised within five to ten years of project completion. This is typical of rural RD&E as innovations often take up to five years to become fully developed and adopted. After 10 years, many innovations are likely to be superseded, or similar outcomes achieved, under the counterfactual scenario.

To demonstrate this point, the accumulation of benefits and costs from all 60 of the selected projects/clusters is presented in Figure 10. It is important to note that this presentation is for illustrative purposes only, as it presents the aggregate results from all impact assessments for year 0 to year 30 irrespective of whether year 0 was 2019/20 or 2024/25 for example.

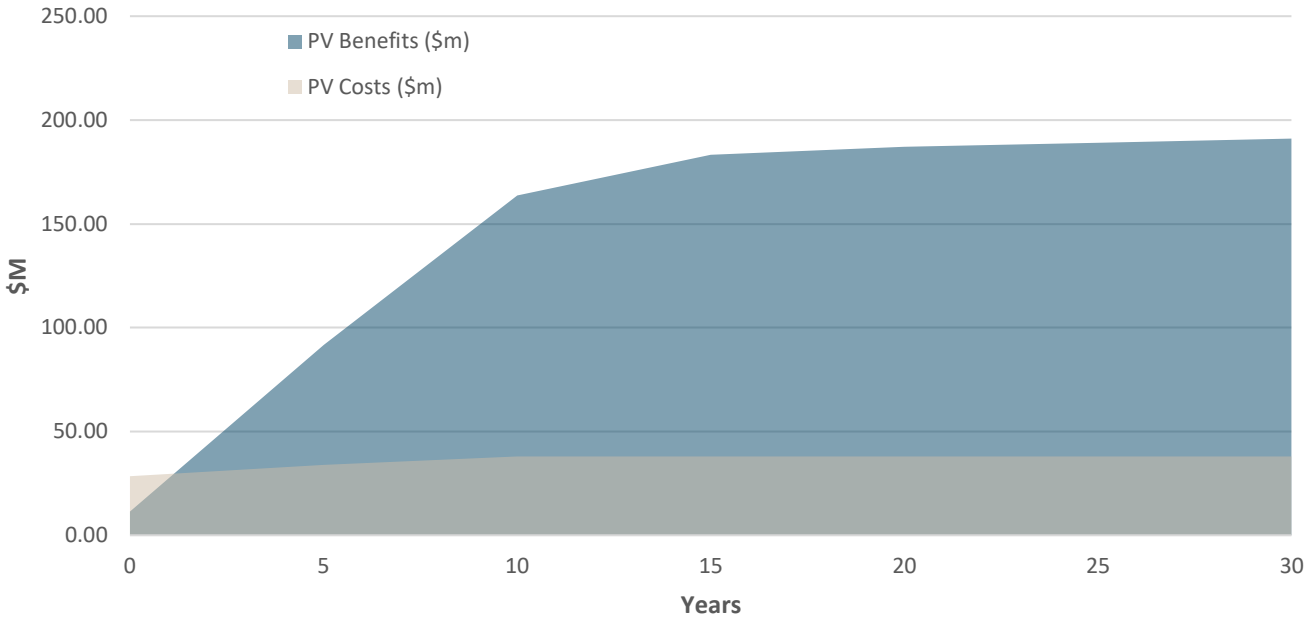

Figure 10 Accumulation of benefits and costs over time

4.4 Triple bottom line impacts

Individual impact assessments seek to identify, and where possible quantify, the full range of economic, social and environmental impacts arising from the project investments. The range of impacts identified across the 60 individual assessments over the period 2019/20 to 2024/25 can be depicted using a word cloud, as presented in **Error! Reference source not found.**

Figure 11 Triple bottom line impacts aggregated across all projects and years, demonstrating range and frequency of impacts identified (Larger text signals higher occurrence of that word)

Notably, there has been an increase in the range of triple bottom line impacts identified across the period, as broader outcomes are sought beyond only economic impacts. Across all years, all projects contributed towards improved triple bottom line outcomes, aligning with AMPC's strategic vision to deliver measurable benefits to not only processors but the broader community and environment.

Table 9 Triple bottom line aggregate impacts

Impacts	Common Themes	Occurrence	Examples
Economic	Cost savings, productivity gains, reduced waste, improved yield, avoided regulatory costs, increased market access	**100%** of projects	◆ Reduced training costs (virtual reality (VR) modules) ◆ Premiums from improved grading (MEQ probe) ◆ Avoided landfill fees (plastics diversion) ◆ Reduced admin and export rejections (Meat Messaging)
Environmental	Energy efficiency, waste reduction, emissions avoidance, improved resource use	**60%** of projects	◆ Reduced energy use via better grading and cooling systems ◆ Diverted plastics from landfill ◆ Reduced food and packaging waste from export rejections
Social	Improved training, wellbeing, community perception, workforce diversity, social licence to operate	**75%** of projects	◆ VR training improving safety and accessibility ◆ Careers portal supporting youth and women in trades ◆ More to Meat campaign enhancing public trust and industry reputation ◆ AI systems improving animal welfare and transparency

More information on how individual projects lead to triple bottom line outcomes is provided in the case study examples below.

Project case studies

Project *2025-1045: LEAP4Beef – Striploin chinning pre-production cell accuracy improvements* provides an example of how projects can contribute to improved economic and social outcomes. By improving efficiency in chinning process through automation, this project reduced waste and labour costs while also enhancing worker safety.

Projects included in the Advanced Manufacturing streamline (*2023-1050/1051: Bovine and ovine Carcass Inspection/Contamination Management - On-site Validation & Process Integration* and *2020-1040: Hot Carcass Grading: Driving Quality Assurance and Processing Efficiency)* conducted trials to integrate technology into the processing lines of ovine and bovine processing facilities, improving yield optimisation and labour efficiency. Despite each project costing around $1 million, their net present value over 30 years exceeded $34 million, demonstrating strong long-term benefits.

Around 60 percent of projects contributed towards improved environmental outcomes, excluding impacts already reflected in the triple bottom line assessment. Most of the impacts identified in the

projects were related to reducing greenhouse gas emissions and waste. Alternative solutions to enhance process efficiency have also been included in projects such as *2025-1040: Efficiency opportunities in rapid cooling of trim - A cost and environmental comparison of CO2, N2 efficiencies, and a new tube chiller system.* Furthermore, projects as *2020-1054: Solar PV with Storage & Biomass Boilers – LCOE calculator* and *2020-1006: Aggregated Waste to Energy (W2E)* explored opportunities to incorporate renewable energy options to the industry, contributing to a carbon neutral target by 2030.

Socially, AMPC's People & Culture streamline focuses on workforce attraction, retention, development and wellbeing. Seventy-five per cent of evaluated projects reported social impacts. Regarding diversity, projects *2023-1061/1062: Empowering Women in Maintenance Trades* improved confidence and awareness of job opportunities, developed job-ready skills and contributed to gender diversity in plants. Improving industry's social licence to operate is a social impact worth mentioning, reflected in project *2024-1093: Animal Husbandry AI Objective Measurement Validation in Australian Abattoirs* aiming to demonstrate practice transparency in animal welfare and building community trust.

4.5 Strategic alignment to Australian Government priorities

Australia's RDC system recognises innovation as crucial for building a profitable and competitive agricultural sector. To support RD&E investment that is strategic, collaborative and targeted, the Australian Government sets national investment priorities, as outlined in Table 10. Priorities are established to ensure that RDCs appropriately target RD&E investment to benefit industry and the broader Australian community. By aligning with these priorities, RDCs empower industries to adopt innovative practices and, as a result, AMPC have an obligation to demonstrate how their investments in RD&E projects align with Australian Government priorities.

When this project began in 2020, AMPC-funded projects were assessed against the Australian Government's former **Rural RD&E Priorities**. In 2021, the Australian Government released a new set of **National Agricultural Innovation Priorities**, replacing the Rural RD&E Priorities (see Table 10).

Table 10 Australian Government Research Priorities (Rural RD&E Priorities were replaced by the National Agricultural Innovation Priorities in 2021)

Rural RD&E Priorities *Replaced in 2021*	**National Agricultural Innovation Priorities*** *2021*
1. Advanced technology	1. Australia is a trusted exporter of premium food and agricultural products by 2030
2. Biosecurity	2. Australia will champion climate resilience to increase the productivity, profitability and sustainability of the agricultural sector by 2030
3. Soil, water and managing natural resources	3. Australia is a world leader in preventing and rapidly responding to significant incursions of pests and diseases through futureproofing our biosecurity system by 2030
4. Adoption of R&D	4. Australia is a mature adopter, developer and exporter of digital agriculture by 2030

*For ease of analysis, these priorities have been abbreviated in this analysis as follows: **(1)** Trusted Exporter of Premium Food, **(2)** Climate Resilience, **(3)** Biosecurity System Futureproofing, and **(4)** Digital Agriculture Adoption.

Analysis of AMPC-funded RD&E projects from 2020/21 to 2024/25 demonstrates strong alignment with both the former Rural RD&E Priorities and the current National Agricultural Innovation Priorities. Across the assessed period, all projects addressed at least one government priority, indicating a consistent strategic focus on delivering public value through innovation.

Under the **Rural RD&E Priorities**, the most frequently addressed areas were:

- **Advanced Technology** (75% of projects),
- **Adoption of R&D** (81%), followed by
- **Soil, Water and Natural Resource Management** (38%), and
- **Biosecurity** (35%).

From 2022 onwards, projects were assessed against the updated **National Agricultural Innovation Priorities**. Particularly strong alignment was observed in:

- **Digital Agriculture Adoption** (63%),
- **Climate Resilience** (66%), and
- **Trusted Exporter of Premium Food** (69%).

Alignment with **Biosecurity System Futureproofing** was comparatively low (16%), suggesting a potential opportunity for targeted investment in this area.

The data indicates that AMPC's RD&E portfolio is well-positioned to support national objectives related to technological advancement, sustainability, and industry competitiveness. The high proportion of projects addressing multiple priorities reflects a deliberate effort to maximise cross-cutting benefits and ensure relevance to both industry and broader government goals.

A detailed analysis demonstrating how each project aligns to government priorities is provided at **Appendix 2**.

5 Discussion

This aggregated analysis of AMPC's RD&E investments from 2019/20 to 2024/25 demonstrates a consistently strong return on investment across all assessed projects and years. These results reflect the economic efficiency and strategic value of AMPC's RD&E portfolio, aligning with its vision of fostering a globally competitive and prosperous red meat processing industry.

The results compare favourably to an assessment of 111 RDC project cluster evaluations, between 2014 and 2019, which found a weighted average BCR of 5.5, with annual weighted average BCRs ranging from 3.3 to 9.1 (Agtrans Research 2019).

Over the six-year period, AMPC invested approximately $20.8 million in core RD&E projects, with the most significant proportion allocated to the Technical Market Access & Markets program stream. Projects within this stream, alongside those in Advanced Manufacturing and Product & Process Integrity, consistently demonstrated high net present values and strong alignment with both AMPC's strategic objectives and Australian Government priorities.

The analysis also highlights the importance of considering broader impacts beyond economic returns. While economic impacts are consistently modelled and quantified, forming the basis of NPV and BCR calculations, environmental impacts have increased in prominence in later years, especially in sustainability-focused projects (e.g. Econoliser, solar PV, plastics diversion). Social impacts are more qualitative but increasingly recognised, especially in workforce, wellbeing, and reputation-focused initiatives. Projects with multi-dimensional triple bottom line impacts (e.g. Meat Messaging, Careers Portal, More to Meat) have delivered broader strategic value beyond financial returns.

Where projects recorded a Benefit-Cost Ratio (BCR) below the average, there were often unquantified social and environmental impacts, which could significantly increase the overall value.

Strategic alignment analysis revealed that AMPC's investments strongly supported national priorities related to technological advancement and adoption of RD&E outcomes. However, alignment with biosecurity and natural resource management was more variable, suggesting opportunities for targeted investment in these areas.

The aggregate analysis across the six-year period provides insights into common attributes of high-performing projects, which can be summarised as:

- Strong alignment with AMPC strategic priorities and government innovation goals
- Multi-dimensional triple bottom line impacts
- Scalable across multiple plants or regions
- Adoption is supported by industry data and stakeholder validation.

6 Conclusion

Over the six-year period from 2019/20 to 2024/25, the AMPC Impact Assessment Program has demonstrated that AMPC's core RD&E investments have delivered consistent and substantial value to the red meat processing sector. With weighted average BCRs ranging from 5.1 to 8.7, the results indicate that AMPC has outperformed RDC benchmarks and delivered strong returns on investment.

The impact assessments provide strong evidence of economic impact, strategic alignment, and broader societal value. Projects have increasingly addressed triple bottom line impacts, with notable growth in environmental and social dimensions alongside economic outcomes.

These findings provide a sound basis for future investment planning and continuous improvement in RD&E delivery.

7 Recommendations

Based on insights provided from this aggregate analysis of annual impact assessments completed over the past six years, it is recommended that AMPC:

- Continue to invest in projects that align with its strategic objectives and National Agricultural Innovation Priorities
- Look to strengthen opportunities for co-investment and partnerships with industry, government and technology providers
- Continue to invest in projects that deliver benefits across the triple bottom line
- Continue to ensure that processors, service providers and other key stakeholders are engaged early to ensure relevance and support adoption pathways
- Strengthen the impact assessment process by ensuring all projects define the pathway to impact and collect necessary data, including on adoption and triple bottom line impacts, and consider undertaking more impact assessments at the program and/or cluster level
- Leverage data and information generated through the impact assessment process for strategic communications to both support industry adoption and enhance public trust and social licence.

8 References

Agtrans Research 2019, *Cross-RDC Impact Assessment 2019*, prepared for the Council of Rural Research and Development Corporations.

Australian Meat Processor Corporation (2018) *Strategic Plan 2018–2022*. Available at: https://ampc.com.au/media/rvpkjhym/ampc_strategicplan_2018_2022.pdf (Accessed: 2 October 2025).Strategic Plan 2020-2025. Australian Meat Processor Corporation.

Australian Meat Processor Corporation (2020) *2019-20 Impact Evaluation – Final Report*. Unpublished internal report prepared for the Australian Meat Processor Corporation.
Australian Meat Processor Corporation (2020) *Strategic Plan 2020–2025*. Available at: https://ampc.com.au/media/4mrb1azq/ampc_strategicplan_2020_2025.pdf (Accessed: 2 October 2025).

Australian Meat Processor Corporation (2021) *2021-1044: Final report – Ex-post impact assessment program FY2021*. Available at: https://ampc.com.au/media/iebmp1yf/2021-1044_final-report_ex-post-impact-assessment-program-fy2021-002.pdf?ext=.pdf (Accessed: 2 October 2025).

Australian Meat Processor Corporation (2022) *Ex-post impact assessment FY2022: Final report (Project 2022-1044)*. Available at: https://ampc.com.au/media/bdladtau/2022-1044_ex-post-impact-assessment-fy2022_final-report.pdf (Accessed: 2 October 2025).

Australian Meat Processor Corporation (2023) *2022-23 Impact Evaluation – Final Report*. Unpublished internal report prepared for the Australian Meat Processor Corporation.

Australian Meat Processor Corporation (2024) *2021-1044: 2023–24 impact evaluations – main report*. Available at: https://ampc.com.au/media/rywjga4d/2021-1044-23-24-impact-evaluations-main-report.pdf (Accessed: 2 October 2025).

Australian Meat Processor Corporation (2025) *2024–25 Impact Evaluation – Final Report*. Unpublished internal report prepared for the Australian Meat Processor Corporation.

Council of Rural Research and Development Corporations (CRRDC) 2018a, *Cross-RDC Impact Assessment Program: Management Procedures.*

9 Appendices

This page has been left blank intentionally, see over page.

Appendix 1: Project list

Table 11 Complete list of projects assessed (2019-2025)

FY	Project Code	Project Name	PV Costs ($m)	PV Benefits ($m)	BCR
2019/2020	2019-1066	Visual monitoring of carcass and carton meats - a system for the 21st century	0.24	3.07	13.02
	2018-1131	Australian Export Meat Inspection Service (AEMIS) review	0.39	1.69	4.32
	2019-1047	Working towards an ideal RMI Visa Program	0.19	1.44	7.66
	2018-1049	Automation of primal cut bagging	0.07	1	15.08
	2018-1083	Non-invasive prediction of flavor, tenderness and juiciness for individual animals at point of slaughter – stages 1 & 2	0.4	1.28	3.22
	2019-1042	Robotic removal of button bone and flat bone after striploin chine bone removal – stage 1 practical feasibility	0.27	1.14	4.19
	2017-1037	Assessment of smoldering as an efficient and low-cost alternative for management of agricultural solid wastes	0.19	0.71	3.81
	2018-1047	Blockchain for the meat industry: where and how?	0.29	0.76	2.61
	2017-1001	Meat industry efficiency and innovation capacity enhancement: benchmarking technologies and systems from automotive industry	0.16	0.25	1.52
	2019-1059	Emission reduction pathways and opportunities for the Australian red meat processing sector	0.05	0.11	2.21
2020/2021	2019-1039	US Pilot for pallet labels as an alternate system of shipping mark	0.2	4.49	22.5
	2018-1045	First prototype automation for deboning lamb Shoulder - Stage 2	0.45	4.07	9
	2020-1065	Working towards an ideal RMI Visa Program - Stage 2	0.25	1.97	7.9
	2018-1030	Technical and economic feasibility of water recycling and energy recovery for red meat processing operations in abattoirs	0.26	1.64	6.4
	2020-1010	Export Certification Framework Project	0.21	1.43	6.9
	2021-1086	Development of a COVID Marshall training package	0.08	1.13	14.4
	2021-1146	Remote Operations – Shadow Robots	0.21	0.58	2.8
	2020-1054	Solar PV with Storage & Biomass Boilers – LCOE calculator	0.1	0.47	4.9
	2020-1006	Aggregated Waste to Energy (W2E)	0.09	0.39	4.6
	2020-1012	Total volatile basic nitrogen in meat products: occurrence, method of determination and use as a freshness indicator	0.07	0.36	5.4

FY	Project Code	Project Name	PV Costs ($m)	PV Benefits ($m)	BCR
2021/2022	2021-1091	Meat Hygiene Assessment 3 - An Industry Trial	0.41	4.79	11.8
	2022-1048	Developing a Voluntary Code of Conduct for Migrant Management (Stage 1)	0.32	2.89	9
	2021-1222	Artificial Intelligence (AI) - Non-X-ray Beef Cutting - Stage 2 (Intelligent Robotics)	0.27	2.64	9.9
	2020-1066	Utilisation of Augmented Reality for the development of Remote Auditing	0.44	2.57	5.9
	2021-1172	Traceability - Primal to Steak/Steak to Primal (Stage 2)	0.28	1.46	5.2
	2021-1223	Shadow Robot - Bandsaw Cutting of Beef Shank - Stage 1	0.24	0.99	4.1
	2019-1038	eMTC implementation including DAWR requirements	0.08	0.82	10.7
	2022-1093	Business Plan for a Red Meat Industry Knowledge Hub	0.03	0.29	8.7
	2021-1131	Review of Traceability outcomes from electronic tagging of sheepimplications for small stock processors outside Victoria	0.02	0.27	12.7
	2019-1060	Megasonic demulsification of oil and grease from meat processing wastewater	0.18	0.23	1.3
2022/2023	2022-1178	C.bovis risk management plan and verification arrangements	0.19	7	35.9
	2019-1065	Real-time identification of red meat provenance and quality attributes	1.9	5.1	2.7
	2021-1161-1232	Food Safety: End-of-line Ovine/Bovine Carcase Inspection/Contamination Management prototype	0.5	3.68	7.4
	2022-1081	Bio-solids upgrade. Stage 1	0.3	3.15	10.6
	2022-1049	Ovine IMF measurement production prototype	0.72	2.19	3
	2021-1201	Wellbeing assessment of the Red Meat Industry Phase 1	0.21	1.33	6.3
	2021-1262-1258	Immersive Reality - Equipment Maintenance Traning - Wizardd Trimmer	0.45	1.28	2.9
	2021-1182	Pinch Analysis & Heat Integration Opportunities	0.27	0.94	3.6
	2016-1326	A cold plasma wash water technology for meat safety and shelf life-extension	0.32	0.9	2.9
	2021-1046	Zero waste to landfill	0.16	0.09	0.6

FY	Project Code	Project Name	PV Costs ($m)	PV Benefits ($m)	BCR
2023/2024	2020-1040	Hot Carcass Grading: Driving Quality Assurance and Processing Efficiency	4.44	34.5	7.8
	2023-1005	Transport Emissions, Efficiency and Sustainability Roadmap	0.57	3.38	5.9
	2021-1047	Low-cost Assessment and Arrangement of Solar PV Opportunities	0.27	1.98	7.3
	2023-1038	Beef Striploin Fat Removal - Stage 2B: Controlled Variable Thickness. Robotic Fat Trimming	0.28	1.5	5.3
	2024-1087	Kokumi Flavour Peptide Production from Beef Offal Co-Products	0.16	1.25	8
	2018-1050	In Plant Trial of Robotic Picking and Packing System	0.25	1.03	4.1
	2023-1047	Beyond Border Analysis of Regulatory and Related Costs	0.15	0.69	4.6
	2023-1061-1062	Empowering Women in Maintenance Trades	0.15	0.45	3
	2022-1055	Diverting Packaging from Landfill – Business Scenario Study	0.41	0.65	1.6
	2022-1128-131, 2022-1139	Smallstock Traceability Pilots (5 plants) and Smallstock Traceability Pilot Study Evaluation	0.69	0.87	1.3
2024/2025	2022-1211, 2024-1032 and 2025-1062	Red Meat Processing National Campaign – More to Meat (Phases 1, 2 and 3)	7.65	34.58	4.5
	2023-1050/1051	Bovine & Ovine Carcass Inspection/Contamination Management - On-site Validation & Process Integration	0.99	11.09	11.2
	2021-1092	The Data-Based Confirmation of Chilled Lamb (held up to 20 weeks) Quality and Safety, using novel smart packaging and spectroscopic technologies	0.8	6.67	8.3
	2024-1010	Use of Meat Messaging and Barcodes as Shipping marks to US	0.28	5.39	19.1
	2025-1040	Efficiency opportunities in rapid cooling of trim - A cost and environmental comparison of CO2, N2 efficiencies, and a new tube chiller system	0.24	4.8	19.7
	2025-1045	LEAP4Beef – Module L4B01 Project 2 – Striploin chining pre-production cell accuracy improvements	0.26	3.6	13.7
	2024-1002	The Econoliser – Industry Trial, Techno-Economic Tool, and National Approval for Ease of Adoption	0.39	3.03	7.7
	2023-1012	Preliminary Investigation into Heavy Metal Detection in Offal using Raman Spectroscopy	0.57	3.13	5.5
	2023-1064	Meat Processing Industry Immersive Careers Experience Tool (Stage 1 and 2)	0.61	2.43	4
	2024-1093	Animal Husbandry AI Objective Measurement Validation in Australian Abattoirs	0.55	0.64	1.2

Appendix 2: Alignment to Australian Government Priorities

Table 12 Alignment of projects sampled by year (from 2020/21) and in aggregate with Australian Government priorities (Projects were not assessed against the National Agricultural Innovation Priorities in 2020-21 or 2021-22)

Year	Project code	Rural RD&E Priorities[1]				National Agricultural Innovation Priorities[2]			
		1	2	3	4	1	2	3	4
2020-21	2021-1146	Y	Y		Y				
	2020-1006	Y		Y	Y				
	2020-1065				Y				
	2020-1010								
	2021-1086		Y		Y				
	2018-1045	Y							
	2018-1030	Y		Y	Y				
	2020-1054	Y		Y	Y				
	2020-1012	Y	Y						
	2019-1039	Y	Y	Y	Y				
2020-2021 Total count (and presented as a proportion)		**7 (70%)**	**4 (40%)**	**4 (40%)**	**7(70%)**				
2021-22	2019-1038	Y	Y						
	2021-1223	Y			Y				
	2021-1222	Y			Y				
	2019-1060	Y		Y					
	2022-1048				Y				
	2022-1093				Y				
	2020-1066	Y	Y		Y				
	2021-1091		Y		Y				
	2021-1131	Y	Y		Y				
	2021-1172	Y	Y		Y				
2021-2022 Totals		**7 (70%**	**5 (50%)**	**1 (10%)**	**8 (80%)**				
2022-23	2021-1232*	Y	Y	Y	Y	Y	Y	Y	Y
	2021-1161*	Y	Y	Y	Y	Y	Y	Y	Y
	2022-1049	Y	Y		Y	Y	Y		Y
	2021-1046	Y		Y	Y		Y		

[1] (1) Advanced technology, (2) Biosecurity, (3) Soil, water and managing natural resources, and (4) Adoption of R&D.
[2] (1) Trusted Exporter of Premium Food, (2) Climate Resilience, (3) Biosecurity System Futureproofing, and (4) Digital Agriculture Adoption.

Year	Project code	Rural RD&E Priorities[1]				National Agricultural Innovation Priorities[2]			
		1	2	3	4	1	2	3	4
	2021-1182	Y		Y	Y		Y		Y
	2022-1081	Y		Y	Y		Y		Y
	2021-1262#	Y	Y	Y		Y			Y
	2021-1258#	Y	Y	Y	Y	Y			Y
	2021-1201				Y	Y			Y
	2022-1178	Y	Y			Y		Y	Y
	2016-1326	Y	Y	Y	Y	Y	Y		
	2019-1065	Y	Y		Y	Y		Y	Y
2022-2023 Totals		**9 (75%)**	**6 (50%)**	**6 (50%)**	**8 (67%)**	**7 (58%)**	**5 (42%)**	**2 (17%)**	**8 (67%)**
2023-24	2020-1040	Y			Y	Y	Y		Y
	2021-1047	Y		Y	Y		Y		
	2022-1055	Y		Y	Y		Y		
	2023-1038	Y			Y	Y	Y		Y
	2023-1047		Y	Y		Y	Y	Y	
	2018-1050	Y			Y	Y	Y		
	2023-1061-1062				Y		Y		
	2022-1128-1131, 2022-1139	Y	Y		Y	Y		Y	
	2023-1005	Y		Y	Y		Y		
	2024-1087	Y		Y	Y	Y	Y		
2023-2024 Totals		**8 (80%)**	**2 (20%)**	**5 (50%)**	**9 (90%)**	**6 (60%)**	**9 (90%)**	**2 (20%)**	**2 (20%)**
2024-25	2022-1211, 2024-1032, 2025-1062			Y	Y	Y	Y		Y
	2023-1064	Y			Y	Y			Y
	2024-1002	Y		Y	Y		Y		Y
	2023-1012	Y			Y	Y	Y		Y
	2021-1092	Y		Y	Y	Y	Y		Y
	2025-1040	Y		Y	Y	Y	Y		Y
	2025-1045	Y			Y	Y	Y		Y
	2024-1093	Y			Y	Y			Y
	2023-1050, 2023-1051	Y			Y	Y	Y		Y
	2024-1010		Y		Y	Y		Y	Y

2024-2025 Totals	8 (80%)	1 (10%)	4 (40%)	10 (100%)	9 (90%)	7 (70%)	1 (10%)	10 (100%)
Aggregate Number of Projects	**39**	**18**	**20**	**42**	**22**	**21**	**5**	**20**
Aggregate Proportion of Projects[3]	**75%**	**35%**	**38%**	**81%**	**69%**	**66%**	**16%**	**63%**

[2] (1) Advanced technology, (2) Biosecurity, (3) Soil, water and managing natural resources, and (4) Adoption of R&D.

[3] (1) Trusted Exporter of Premium Food, (2) Climate Resilience, (3) Biosecurity System Futureproofing, and (4) Digital Agriculture Adoption.

[3] No assessment against the National Agricultural Innovation Priorities in 2020-21 and 2021-22.

Disclaimer and document control

This report has been prepared by GHD for AMPC and may only be used and relied on by AMPC for the purpose agreed between GHD and AMPC as set out this report.

GHD otherwise disclaims responsibility to any person other than AMPC arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible. The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared. The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described within this report. GHD disclaims liability arising from any of the assumptions being incorrect.

GHD has prepared this report on the basis of information provided by AMPC and others who provided information to GHD, which GHD has not independently verified or checked beyond the agreed scope of work. GHD does not accept liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions in that information.

Revision	Author	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date
1.0	N Arakaki, S Hannam	S Madden	On file	S Madden	On file	31/10/2025
2.0	N Arakaki, S Hannam	S Madden	On file	S Madden	On file	20/11/2025
3.0	N Arakaki, S Hannam	S Madden	On file	S Madden	On file	24/11/2025