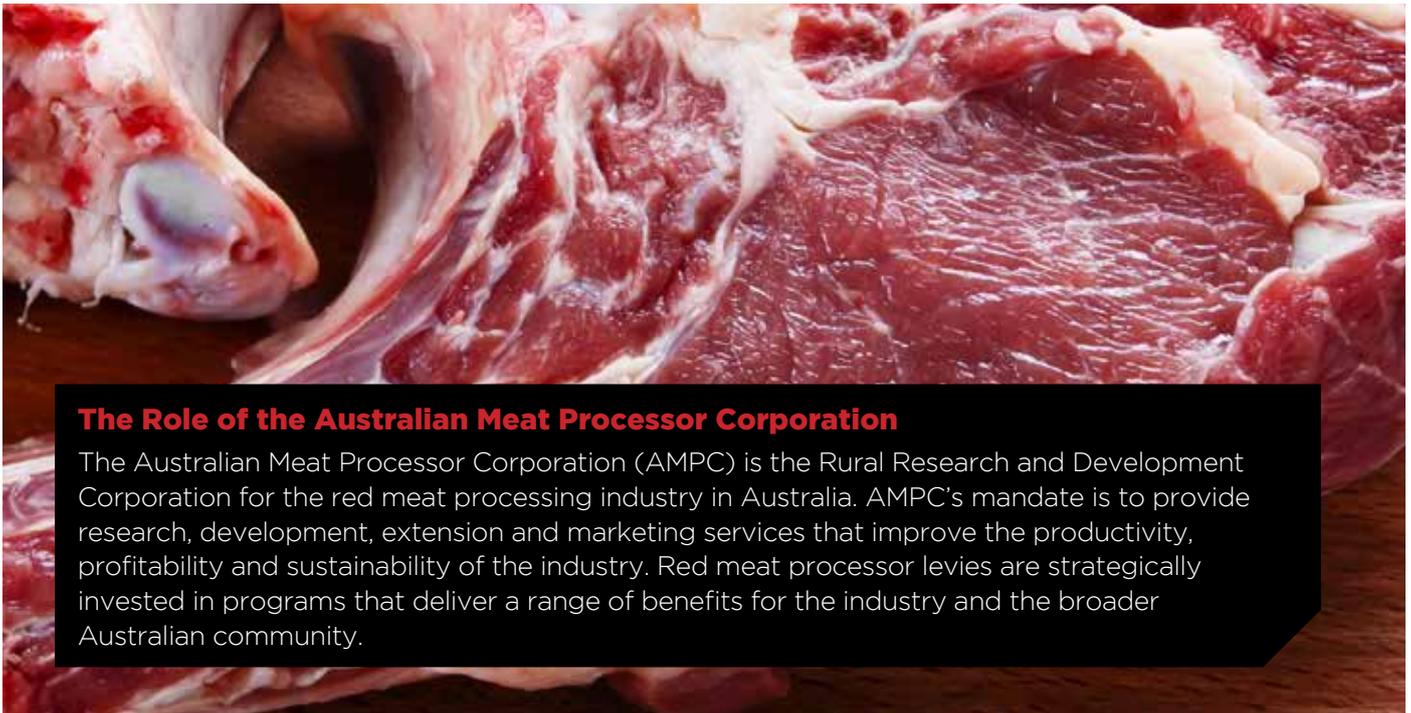


# ANNUAL OPERATING PLAN

2016-2017



**The Role of the Australian Meat Processor Corporation**

The Australian Meat Processor Corporation (AMPC) is the Rural Research and Development Corporation for the red meat processing industry in Australia. AMPC’s mandate is to provide research, development, extension and marketing services that improve the productivity, profitability and sustainability of the industry. Red meat processor levies are strategically invested in programs that deliver a range of benefits for the industry and the broader Australian community.

**PREFACE**

AMPC administers statutory levies on behalf of the red meat processing industry in Australia, as detailed in its Statutory Funding Agreement with the Australian Government. As part of the Statutory Funding Agreement, AMPC is required to submit an Annual Operating Plan (AOP) which describes AMPC’s activities for the year to come.

AMPC has 105 members operating in 135 meat processing establishments, representing over 97% of Australia’s red meat processing capacity.

**Through research, development and extension (RD&E) activities, AMPC aims to:**

- // Improve processor efficiency and competitiveness
- // Enhance the sustainability of the red meat processing industry
- // Assist in protecting and enhancing access to new markets
- // Enhance industry capability and innovative capacity

// Increase overall processor productivity and performance

**AMPC has focused its RD&E and marketing activities across three programs:**

1. Core Program
2. Joint Program
3. Plant Initiated Projects Program

The **Core Program** is focused on addressing key issues facing processors including productivity, profitability, sustainability, integrity and capability. In addition to being administered and delivered by AMPC, the Core Program is supported by an industry-wide consultation process aimed at identifying and delivering innovative outcomes. Funding for this program is derived from processor levies and matched government funding (where applicable). The Core Program is divided into five distinct sub-programs (listed in the table opposite) that are central to delivering continuous improvement and long-term sustainability to the red meat processing industry.

The **Joint Program** delivers supply chain improvements that support food safety, eating quality and increased demand for red meat. The program is collaboratively funded between AMPC and Meat & Livestock Australia (MLA), and leverages both processor and producer levies, as well as government matching of funds for eligible projects.

The **Plant Initiated Projects (PIP) Program** enables processors to identify and undertake RD&E projects that generate whole-of-industry benefits by trialling and adopting new technologies at operating plants under real world conditions. This is realised through leveraging private investment in industry RD&E.

Table 1. AMPC Core Program

#	Sub-Program	Objectives
P1	Processing Technologies	Improve process efficiency, reduce production costs and facilitate improved value capture through the use of technology throughout the red meat processing value chain
P2	Environment and Sustainability	Improve industry sustainability through environmental, economic and social outcomes
P3	Processing Hygiene, Quality and Meat Science	Increase the standards of food safety, product integrity and eating quality, while delivering new insights into effective process interventions for the industry and broader community
P4	Capability, Extension and Education	Translate and communicate AMPC's RD&E activities to stakeholders, including key training initiatives at both research and vocational levels
P5	Industry Improvement and Economic Analysis	Evaluate the economic impact of AMPC's RD&E investments in improving the performance of the overall industry



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# INTRODUCTION

## THE ANNUAL OPERATING PLAN

The 2016-17 AOP provides an overview of the activities AMPC will fund for the financial year 2016-2017 (FY2016-17) on a program basis. Specific project objectives and outcomes can be found in the detailed Program Overview available on AMPC's website: [www.ampc.com.au](http://www.ampc.com.au)

The RD&E projects taken on by AMPC are guided by AMPC's 2013-2017 Strategic Plan. This plan is aligned with the MISP 2020 that sets out the overarching priorities for the red meat industry. AMPC's selection of RD&E projects also takes into account other key industry elements such as the Australian Government National Science and Research Priorities, as well as industry trends and strategic risks.

## PLANNING FOR THE FUTURE

AMPC regularly evaluates and adjusts investments to ensure the long-term sustainability of the Australian red meat processing industry and the broader agriculture sector.

AMPC has defined a 10 year strategic plan (2025 Strategic Plan) based on an extensive review of the key imperatives facing the Australian industry, both nationally and internationally. It also defines a new aspirational purpose for AMPC: to enable Australia to build the most sustainable red meat industry. This new purpose seeks to improve the red meat processing industry by taking a whole-of-industry view toward supporting the overall competitiveness and sustainability of the Australian red meat industry.

The 2025 Strategic Plan defines long-term strategic priorities and emphasises the need to address high impact areas, including supply chain integration, changing consumer consumption preferences and industry-wide collaboration. In FY2016-17, AMPC will aim to operationalise its new strategy by implementing the prioritised projects in this AOP.

## CONTINUOUS BUSINESS IMPROVEMENTS

Since the completion of the new strategy in June 2016, AMPC has embarked on a reorganisation of its functions and operations to support this long-term plan.

AMPC aims to become a leading provider of RD&E, playing a vital role in influencing and growing the Australian red meat industry. Hence, it is essential for AMPC to enhance services and benefits to all members, key stakeholders and the broader industry. The following



represents a list of AMPC's recent accomplishments:

## STAKEHOLDER ENGAGEMENT

### **Member perception survey**

AMPC recently engaged its 105 members in a survey to understand their perception of AMPC as a member based RD&E organisation, and validate AMPC's understanding of their individual needs. This feedback was instrumental in informing AMPC's purpose and focus areas for the 2025 Strategic Plan. Going forward, AMPC will explore how best to satisfy the needs of its different member segments.

### **Enduring industry relationships**

AMPC seeks to strengthen relationships with industry stakeholders to enhance collaboration within the red meat industry.

This will position AMPC to drive industry collaboration and information sharing that can be leveraged to improve its RD&E portfolio.

## OPERATIONAL IMPROVEMENTS

### **Improved communications**

AMPC seeks to continuously improve its stakeholder engagement, as described in its Strategic Communications Plan 2015-18. The plan emphasises the need to enhance targeted communication capabilities both face-to-face and online. To address this need, AMPC has introduced several initiatives, including the member perception survey already described, as well as the development of a new website to enable greater knowledge sharing and collaboration. The site will be launched in October.

## PUBLICATIONS

### **Strategic risk report**

AMPC developed a report identifying the strategic risks facing the red meat industry. The report outlines suggested policies, processes and measures for red meat processors to implement to mitigate these risks. The full report, *Strategic Risks Facing the Australian Red Meat Industry*, is available on AMPC's website: [www.ampc.com.au](http://www.ampc.com.au)

### **Sustainability report**

AMPC is developing its first ever industry sustainability report: a key focus area for AMPC in the new 2025 Strategic Plan. The report, which shows how AMPC is addressing the strategic risks facing the red meat industry, is expected to be available from October.



# RED MEAT INDUSTRY TRENDS AND RISKS

AMPC performed an assessment of the strategic risks likely to impact Australian processors over the next 5 to 10 years. This assessment has played a significant part in the development of the 2025 Strategic Plan. The following is a summary of the macro-factors identified:

### ASSESSMENT OF RED MEAT INDUSTRY TRENDS AND RISKS

A number of global trends are expected to impact the red meat

industry. With the assistance of a global professional services firm, AMPC developed a holistic view of global megatrends – spanning broad areas including economics, demographics, culture, technology availability and natural resource usage.

Eight industry trends were identified based on the megatrends' impact on the red meat industry, and interviews with Subject Matter Resources in areas such as biosecurity, food supply chains and economics.

The industry trends relate primarily to economic growth in Asia; a shift in Australia's consumption patterns; increasing reliance on export demand; and increasing competition due to more accessible international markets.

Progressing from the industry trends, a comprehensive assessment of potential strategic risks were identified and prioritised, to identify those with the greatest impact and likelihood. Trends and risks are described in the following section.

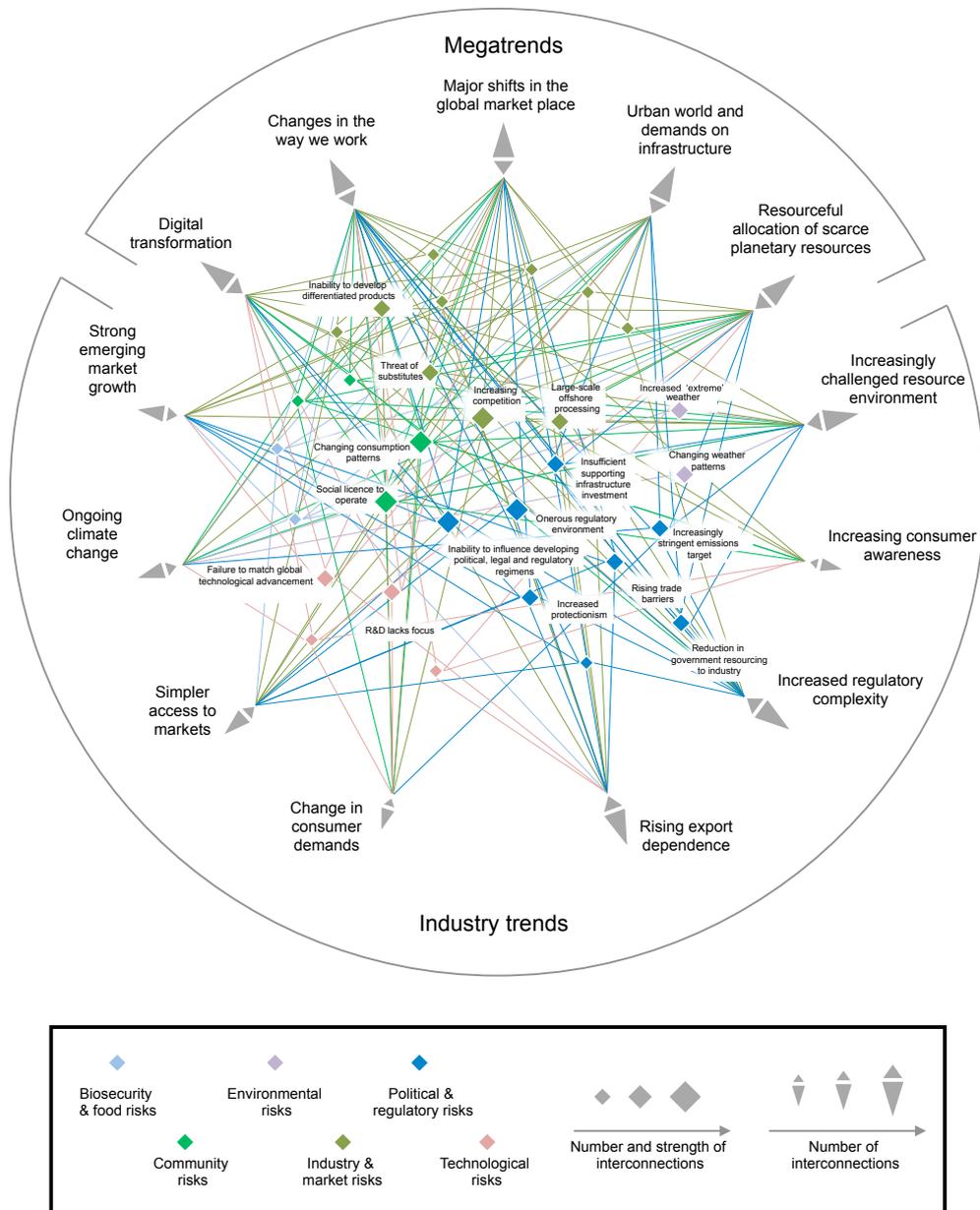


Figure 1. Risks-trends interconnections map

## KEY INDUSTRY TRENDS

There are eight trends which are expected to have great relevance to the red meat industry:

### **Strong emerging market growth**

The majority of global economic growth is occurring in the emerging markets of Asia. The growth is particularly evident through the increasing size of middle-class wealth in Asia, leaving more people with higher disposable incomes, and a greater demand for imported quality foods, such as from Australia.

### **Rising export dependence**

An increasing majority of the Australian red meat supply is exported, thereby leaving the industry exposed to volatility in international prices.

### **Simpler access to markets**

Other nations are increasingly gaining export market access via free and bilateral trade agreements, which simplifies the supply chain and enables enhanced competition.

### **Change in consumer demands**

Changing protein consumption patterns in developed nations have negatively impacted red meat demand since the 1970s. The change in demographics has also led to the rise of the 'healthy' or 'humane' consumer.

### **Increasing consumer awareness**

Increasing consumer focus on food safety and quality, particularly in developing nations, highlights the importance of provenance and supply-chain traceability.

### **Ongoing climate change**

International weather patterns are changing and the severity and frequency of extreme weather is on the rise. This has the potential for significant impacts to the industry.

### **Increasingly challenged resource environment**

While much of Australian meat production comes from grass-fed stock, international food security and the use of land resources may become of increasing concern to certain sections of the population.

### **Increased regulatory complexity**

Regulation for international standards in areas such as environmental protection, food safety and animal welfare are increasing, thus creating more complexity throughout the industry.

## STRATEGIC RISKS FACING THE RED MEAT INDUSTRY

A combination of mega trends and industry trends led to the identification of six strategic risks. AMPC's objective is to assist processors to understand, manage and overcome these risks.

### **Competition and market access**

While Australia currently exports more than its peers on a relative basis, the industry faces substantial competitive pressures, both nationally and internationally. Domestically, the industry competes amongst itself for the export of live or processed cattle. Internationally, the industry competes primarily with Brazil, the USA and India. Over the coming five-year period, the intensity of competition is predicted to

increase, with Australian red meat competing at a cost disadvantage.

### **Changing consumption patterns**

Consumers in developed nations have reduced red meat consumption during recent decades. Increasingly, consumers focus on 'healthy' and 'humane' consumption and drive demand for convenience foods. These factors have resulted, and will continue to result, in material changes to consumption patterns. While red meat has been traditionally known for quality and high nutritional value, consumers in developed nations are increasingly turning to substitutes that are both cheaper and less resource-intensive such as chicken and pork.

### **Climate change**

Australia's natural environment is changing, with increasing incidences of 'extreme' weather events and altered weather patterns directly affecting the production of cattle. The effects of drought on the east coast, especially in Queensland, are being felt at various points along the supply chain, while the increasing rate and severity of extreme climatic events may pose ongoing and regular disruptions to Australian production.

### **Social licence to operate**

The red meat industry in Australia has managed to maintain its social licence to operate, derived largely from the regional communities in which it functions. However, the increasingly important factors of animal welfare, environmental impact and healthy diets will place the industry's social licence to operate under a high degree of external scrutiny and uncertainty.

## Regulatory environment

As an industry highly fragmented within the supply chain both vertically and horizontally, the red meat industry is poorly positioned to respond to an increasingly uncertain regulatory environment, where changes can occur rapidly and without industry consultation. Ensuring effective advocacy to avoid unnecessary and burdensome regulation typically requires a high-degree of industry alignment. Where this alignment is not present, industries typically fail to achieve positive legal, regulatory and market access outcomes.

## Supply chain integration

The high degree of vertical fragmentation of Australia's red meat industry has directly contributed to its competitive disadvantage in export markets relative to those with greater levels of vertical integration. Vertical integration reduces economic costs in the industry, allows for greater sharing of information and promotes economies of scale that can support higher levels of innovation and capital investment. By operating with a higher degree of fragmentation than its peers, the Australian red meat industry will not be able to market as effectively, nor be as responsive to customer demands.

## RECOMMENDATIONS TO ADDRESS THE STRATEGIC RISKS

While Australia's red meat industry faces real strategic risks, implementing policies, processes and measures to enable effective responses can be difficult to manage, adapt and overcome the risks.

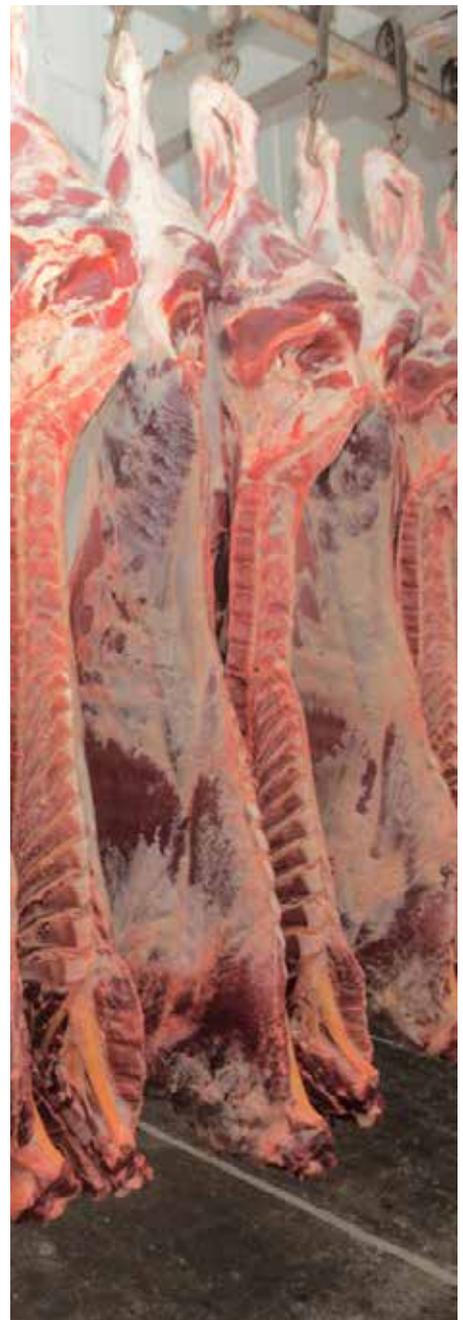
Some risk mitigation activities include:

- // Establish structures that facilitate sharing and collaboration within the industry
- // Coordinate as an industry to prepare for, and respond to, risks
- // Build the capability to understand and adapt to meet the needs of the domestic and international markets
- // Expand and maintain relationships to benefit trade agreements and work with the Australian Government to reduce technical barriers to trade
- // Collaborate with government to effectively respond to strategic risks
- // Identify, understand and capitalise on leading global knowledge in all aspects of the red meat value chain
- // Where appropriate, explore value add and premium strategies targeted at key market opportunities
- // Establish a strong and effective advocacy presence at a national and international level to promote the value of the industry in Australia to Australians, and the quality of Australian red meat to international markets
- // Improve productivity throughout the value chain and reduce the industry's environmental and social impacts
- // Identify and address priority technical barriers to trade
- // Define and develop a competition response plan to the live export market and to other protein segments

## Strategic Risks

A strategic risk is one that can occur at the corporate and industry level with the potential to materially impact the health, longevity and prosperity of the industry.

Strategic risks are not operational, financial or compliance risks — these are purely the risk of doing business.



# AUSTRALIAN GOVERNMENT RESEARCH PRIORITIES

In May 2015, the Australian Government announced an updated set of science and research priorities designed to increase investments in areas of immediate and critical importance to the nation. The priorities are neither exclusive nor exhaustive. AMPC strives to align its RD&E portfolio with the research priorities by sharing objectives and aiming for corresponding outcomes. The objective for each priority is described next together with AMPC's program alignment.

## NATIONAL SCIENCE AND RESEARCH PRIORITIES

Nine priorities devoted to science and research have been developed by the Australian Government:

### Food

Develop internationally competitive, sustainable, profitable, high-intensity and high-production capacity in new and existing food products and maintain Australia's reputation for clean, safe and quality-controlled food production.

### Soil and water

Focus on Australia's critical soil and water assets, build capacity for improved accuracy and precision in predicting change to enable better decision-making.

### Transport

Develop low-cost, reliable, resilient and efficient transport systems that respond to Australia's changing urban, regional and remote communities and meet business needs.

### Cybersecurity

Position Australia as a leader in cutting-edge cybersecurity research and innovation to safeguard the country's security,

enhance resilience and enable economic growth.

### Energy

Enable the Australian energy sector to improve efficiency and reduce emissions, integrate diverse energy sources into the electricity grid and, as a result, create jobs, growth and export opportunities.

### Resources

Support the exploration of traditional resources, rare earth elements and groundwater, and develop new technologies and knowledge to allow safe, environmentally sensitive and economically viable resource extraction.

### Advanced manufacturing

Develop and support existing industries while enabling the development of a new and advanced manufacturing sector.

### Environmental change

Build Australia's capacity to respond to environmental change and integrate research outcomes from biological, physical, social and economic systems.

### Health

Build healthy and resilient communities throughout Australia by developing treatments, solutions and preventative strategies to improve physical and mental well-being and improve the efficiency and effectiveness of Australia's health care system.

## RURAL RD&E PRIORITIES

Further, the Australian government has developed a set of rural RD&E priorities consistent with the National Science and Research Priorities focusing on rural investment areas with a high need for funding.

### Advanced technology

Enhance innovation of products, processes and practices across the food and fibre supply chains through technologies such as robotics, digitisation, big data, genetics and precision agriculture.

### Biosecurity

Improve understanding and evidence of pest and disease pathways to help direct biosecurity resources, minimising biosecurity threats and improving market access for primary producers.

### Soil, water and natural resources

Manage soil health, improve water use efficiency and certainty of supply, sustainably develop new production areas and improve resilience to climate events and impacts.

### Adoption of RD&E

Focus on flexible delivery of extension services that meet primary producers' needs and recognise the growing role of private service delivery.

Table 2. Alignment of AMPC RD&E and marketing programs with the Australian Government research priorities

	National Science and Research Priorities					
	Food	Soil and water	Transport	Cybersecurity	Energy	Resources
Program 1 <b>Processing Technologies</b>		✓				
Program 2 <b>Environment and Sustainability</b>	✓	✓	✓		✓	
Program 3 <b>Processing Hygiene, Quality and Meat Science</b>	✓					
Program 4 <b>Capability, Extension and Education</b>						
Program 5 <b>Industry Improvement and Economic Analysis</b>			✓	✓		
Program 6 <b>Joint Program</b>				✓		



			Rural RD&E Priorities				
Advanced manufacturing	Environmental change	Health	Advanced technology	Biosecurity	Soil, water and natural resources	Adoption of RD&E	
✓			✓	✓			
✓	✓				✓		
✓			✓	✓			
✓	✓	✓	✓		✓	✓	
✓		✓	✓				
✓			✓	✓			



# RD&E DEVELOPMENT PROCESS

## RD&E CONSULTATION FRAMEWORK

AMPC leverages a consultation framework to identify, prioritise and develop strategic research for its portfolio.

The consultation framework is a formalised framework that guides the generation of ideas initiated by AMPC's annual member survey, with the objective to capture and prioritise the needs of processors and to ensure that AMPC's RD&E portfolio is of highest relevance to its members, the red meat industry and the Australian community.

Input from AMPC's members is integrated into the Portfolio Development Process (PDP), which consists of industry consultative committees, known as Program Advisory Committees (PACs) which provide strategic and technical input on priorities for investment within the five core programs. Moving forward, AMPC seeks to include Program Expert Groups (PEGs) into the PDP in order to obtain feedback from individuals who possess deep technical knowledge.

Representatives participate in the consultation process to ensure that the needs of the industry and the Australian community are addressed. AMPC also partners with research providers to consider the latest developments in science and technology and obtain support with the development of projects.

More information on the Portfolio Development Process (PDP) and the consultation framework can be found on AMPC's website: [www.ampc.com.au](http://www.ampc.com.au)

## INDUSTRY COLLABORATION

AMPC engages with a host of key industry stakeholders to ensure that levies are effectively invested in RD&E projects of both priority and value to the red meat industry.

One component of AMPC's expenditure involves co-investment with MLA in Joint Program activities. This partnership leverages services to the entire red meat supply chain while avoiding duplication.

To ensure that the RD&E priorities of AMIC's processing members are considered, AMPC works closely with the peak industry council and advisory body.

AMPC engages with the Australian Government, for example, the Department of Agriculture and Water Resources, to ensure effective alignment and delivery of industry and government priorities, and the integration of RD&E activities addressing the needs of the Australian community.

Extension activities are critical to the effective uptake of RD&E investments in the industry, which is why AMPC continues to work with the Meat Industry Training and Advisory Council (MINTRAC) to ensure the processors adopt RD&E and other AMPC-funded outputs.

AMPC facilitates ongoing engagement and input into the development and delivery of program areas with a diverse group of RD&E providers from both the public and private sectors. These organisations include universities, R&D corporations (RDCs), research institutes, the Commonwealth Scientific and Industrial Research Organisation (CSIRO), and Cooperative Research Centres (CRCs) as well as other industry

providers in Australia and overseas.

AMPC will continue to develop strategic partnerships and alliances with other organisations that have complementary capabilities and service delivery assets.

## LINKS BETWEEN AMPC'S RD&E PROGRAMS, THE MISP 2020 PLAN AND INDUSTRY RISKS AND TRENDS

AMPC's RD&E projects are aligned with AMPC's Strategic Plan 2013-2017, to be superseded by AMPC's 2025 Strategic Plan in the coming year. AMPC's Strategic Plan 2013-2017 sets out six strategic imperatives, serving as terms of reference for AMPC's RD&E activities, in alignment with the Red Meat Advisory Council's MISP 2020 plan.

The MISP 2020 takes a broader perspective, defining overarching priorities for Australia's red meat and livestock industry, comprising the production and processing of beef, mutton and goat meat as well as live exports.

Both the MISP 2020 and AMPC's Strategic Plan 2013-2017 take into account industry trends and risks which are uncontrollable - yet manageable - factors that could significantly alter the red meat industry, and should therefore be taken into account both on a strategic and operational level.

How AMPC's RD&E links with AMPC's Strategic Plan 2013-2017, the RMAC's MISP 2020 and industry trends and risks is found in Figure 2 below. Further details on alignment between particular programs and strategic imperatives are provided in subsequent sections.

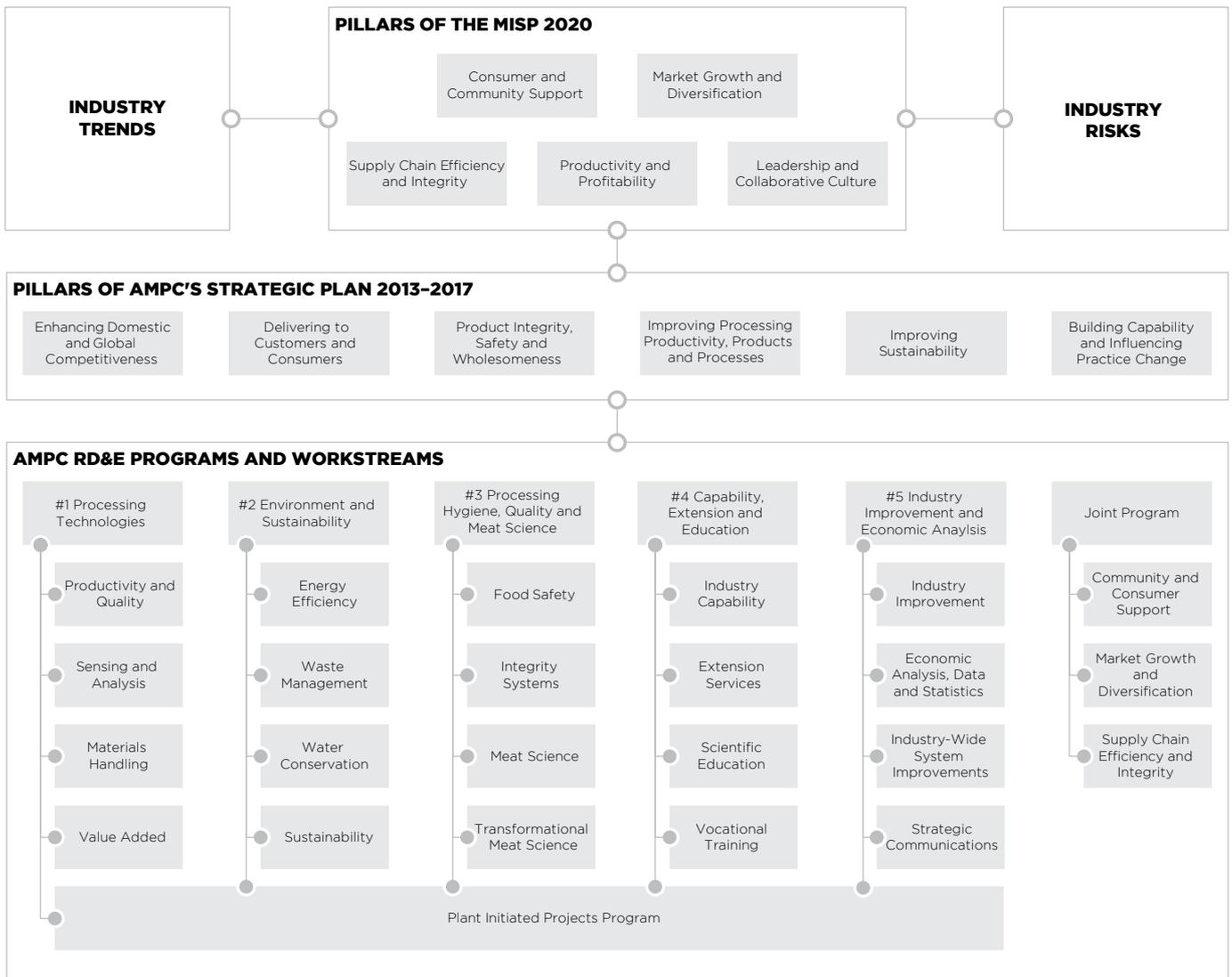


Figure 2. Links between AMPC RD&E, the MISP 2020 and the red meat industry's risks and trends

Note that the workstream 'Food Safety' is a core workstream under the 'Processing, Hygiene, Quality and Meat Science Program', which is fully managed and funded by AMPC. However, given the significance of food safety to the industry, AMPC collaborates with Meat & Livestock Australia regarding knowledge and data sharing to reinforce the importance of a whole-of-industry approach.



# PROGRAM 1: PROCESSING TECHNOLOGIES

**Program 1**

# PROCESSING TECHNOLOGIES

In a rapidly evolving competitive environment, the adoption of new technologies, the development of new products and product differentiation are critical to reducing costs and improving operational efficiencies without compromising safety of our workforce, product integrity and quality, in particular for Australia, which is recognised for its high-quality meat.

This program is in response to these challenges to ensure Australian meat processors improve their competitive position in international markets.

As illustrated in Figure 3, the projects under this program are driven by the MISP 2020, AMPC’s Strategic Plan 2013–2017, industry trends and strategic risks, and aim to:

- // Increase the productivity of red meat processors to compete on the global scene through new technologies and manufacturing practices
- // Examine novel and efficient technologies and processes for whole carcass measurements and monitoring
- // Develop new meat products
- // Examine opportunities to value add from meat and meat products
- // Enhance the adoption and commercialisation of new technologies and innovation in the industry

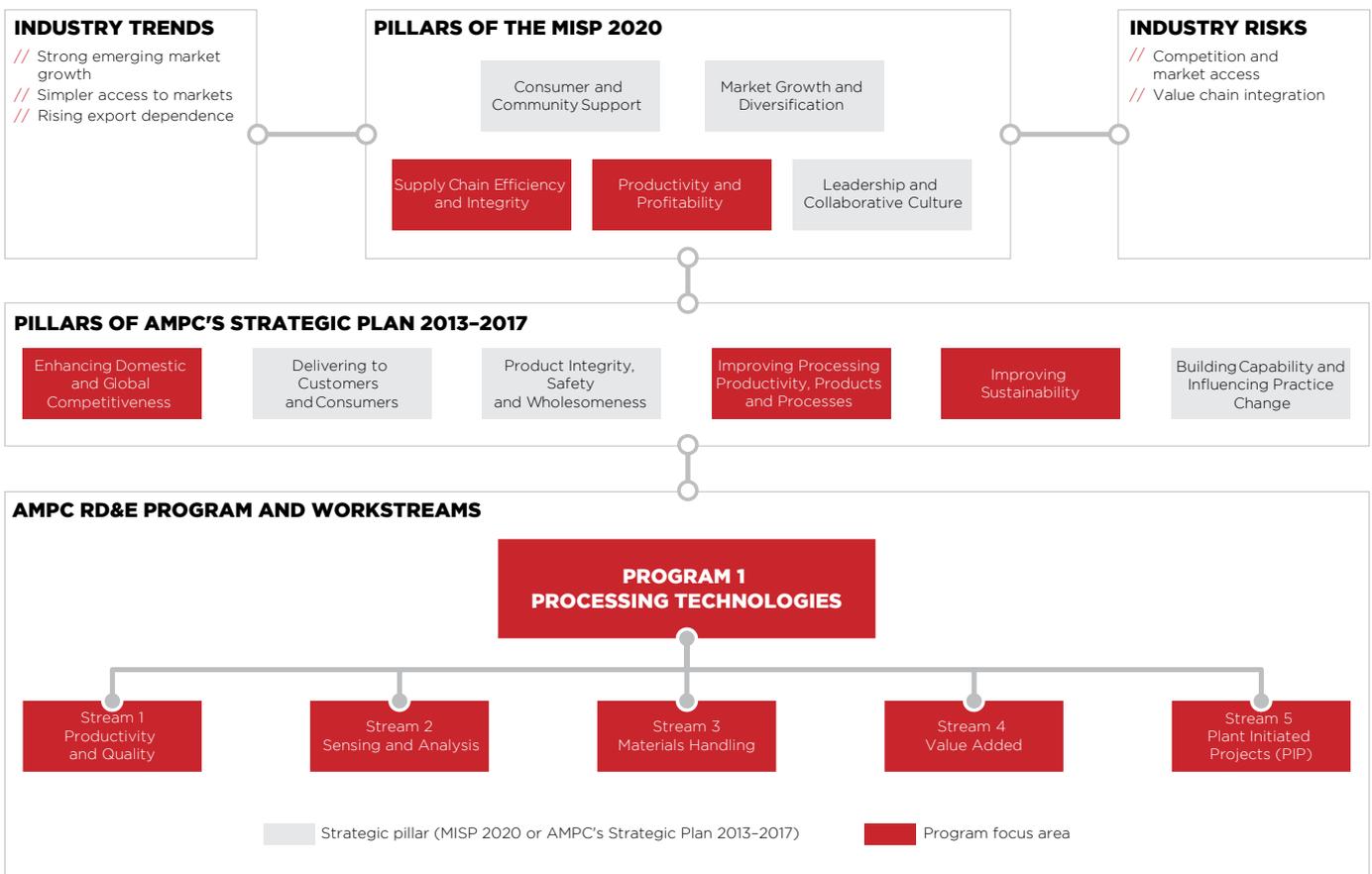


Figure 3. Elements influencing Processing Technologies projects

Description of Workstreams	Budget <sup>1</sup>
<b>Workstream 1: Productivity and Quality</b>	<b>\$856,389</b>

**Context:**

Increasing processing efficiency and productivity is important to improve competitiveness in national and international markets as well as to ensure the long-term sustainability, high quality standards, and growth of an industry constrained by high costs and low margins.

**Objective:**

This workstream focuses on developing and implementing technologies and solutions that automate manual tasks, increase the use of manual assist technologies, and improve resource efficiency to enhance process value and recovery.

**New projects for FY2016-17:**

- // 2017-1022: Automatic equipment for handling the bung in the lamb slaughter process
- // 2017-1045: Prototype development of machine to remove fat from beef striploins leaving a uniform thickness behind
- // 2017-1050: First feasibility of shoulder deboning based on an adaptation of an existing ATTEC machine
- // 2017-1052: Automated French dressing of lamb rib rack: market confirmation of the technical and commercial suitability of an 'ideal' automated machine design followed by its prototype design and build stages
- // 2017-1054: Feasibility study into a high-volume cellular processing plant
- // 2017-1055: Detail design study for the integration of CO2 capturing and liquefaction for dry ice production in an existing meat processing facility
- // 2017-1059: Tunnel boner (machine development)
- // 2017-1084: Robotic beef splitting CBA and development
- // 2017-1085: Feasibility research and evaluation of miniaturised snake robotics for spinal cord removal prior to splitting beef carcasses
- // 2017-1060: Cost benefit analysis for combined splitting and spinal cord removal
- // 2017-1003: Comprehensive Internet of Things (IoT) demonstration and trial addressing a major meat processing industry opportunity
- // 2017-1069: A boning line modular processing unit (preliminary report)

**Expected outcomes for FY2016-17:**

- // A series of studies from operational feasibility, cost-benefit analysis and market assessments
- // Machine designs for potential implementations
- // Prototype development and testing
- // Development and upscaling of approved technologies and solutions

<b>Workstream 2: Sensing and Analysis</b>	<b>N/A</b>
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**Context:**

The Australian red meat processing industry deals with highly variable carcasses in terms of shape, size and composition. As a result, the ability to automatically measure characteristics 'online' provides an opportunity to increase overall processing efficiency and productivity.

**Objective:**

This workstream focuses on developing and implementing systems that can effectively manage these variations to capture the necessary data and images to adjust cutting lines for automation and inform

<sup>1</sup> AMPC contribution to new projects in FY2016-17

**Workstream 2: Sensing and Analysis (continued)**

processing related decisions according to carcase type, product specification, customer and market requirements.

**New projects for FY2016-17:**

// No new projects initiated in FY2016-17

**Expected outcomes for FY2016-17:**

- // A series of reports on X-ray technologies including quantitative assessment and cost-benefit analysis
- // Insitu laboratory observations for further potential development

**Workstream 3: Materials Handling**

**\$224,250**

**Context:**

Meat processing facilities incur significant labour and other business costs associated with managing increasingly complex material handling challenges.

**Objective:**

This workstream focuses on developing and implementing cost-effective technologies and solutions to materials handling tasks, including the load out of carcasses, picking and packing boned and sliced product (e.g. primal, sub-primal and shelf-ready portions) and cartoned meat.

**New projects for FY2016-17:**

- // 2017-1064: Development of naked primal cut recognition software
- // 2017-1065: Integrated robotic picking and packing of primal cuts (solution development)

**Expected outcomes for FY2016-17:**

// Development of technologies and software to help and assist workers in manual handling tasks

**Workstream 4: Value Added**

**\$63,855**

**Context:**

Exploring the potential for innovative concepts, products and technologies to add value within the processing supply chain is a key requirement to ensure productivity growth and industry competitiveness of Australian red meat processors.

**Objective:**

This workstream focuses on transforming existing and developing new products in order to deliver cost-effective methods of increasing value in alignment with customer needs.

**New projects for FY2016-17:**

- // 2017-1063: Value adding stage 2
- // 2017-1025: Upgrading of side streams – potential in lamb and beef hydrolysates

**Expected outcomes for FY2016-17:**

// Set of reports on possible innovative concepts or products that can add value to the supply chain

**Workstream 5: PIPs**

AMPC supports its members in identifying and undertaking RD&E projects that benefit the international competitiveness of the Australian red meat processing industry, e.g. site or business-level RD&E activities and areas that will improve processing efficiency and technology (automation of manual tasks, value-adding of existing and new products, improvements to processes, etc.).

**AMPC contribution to new projects in FY2016-17**

**\$1,144,494**

# PROGRAM 2: ENVIRONMENT AND SUSTAINABILITY

**Program 2**

# ENVIRONMENT AND SUSTAINABILITY

Similar to most other agricultural industries, the red meat processing industry faces considerable challenges, including declining resources and capability, labour shortages, changing customer requirements and climate change. These challenges place increasing pressure on the Australian red meat industry to remain sustainable, productive and competitive in the international market while ensuring the high product integrity and quality standards that it is known for.

This program is AMPC's response to maintain industry sustainability by reducing energy consumption and greenhouse gas emissions, while improving waste management and water treatment of red meat processing facilities.

As illustrated in Figure 4, the projects under this program are driven by the MISP 2020, AMPC's Strategic Plan 2013-2017, industry trends and strategic risks, and aim to:

- // Improve industry knowledge and capability to achieve sustainable resource management and adapt to climate change
- // Examine technologies, practices and procedures that contribute to improved waste management systems and add value to waste products
- // Explore options to integrate new technologies and improve industry infrastructure
- // Maintain business sustainability and ensure efficient food safety and product integrity standards
- // Maintain and enhance efficient product integrity standards and quality assurance systems

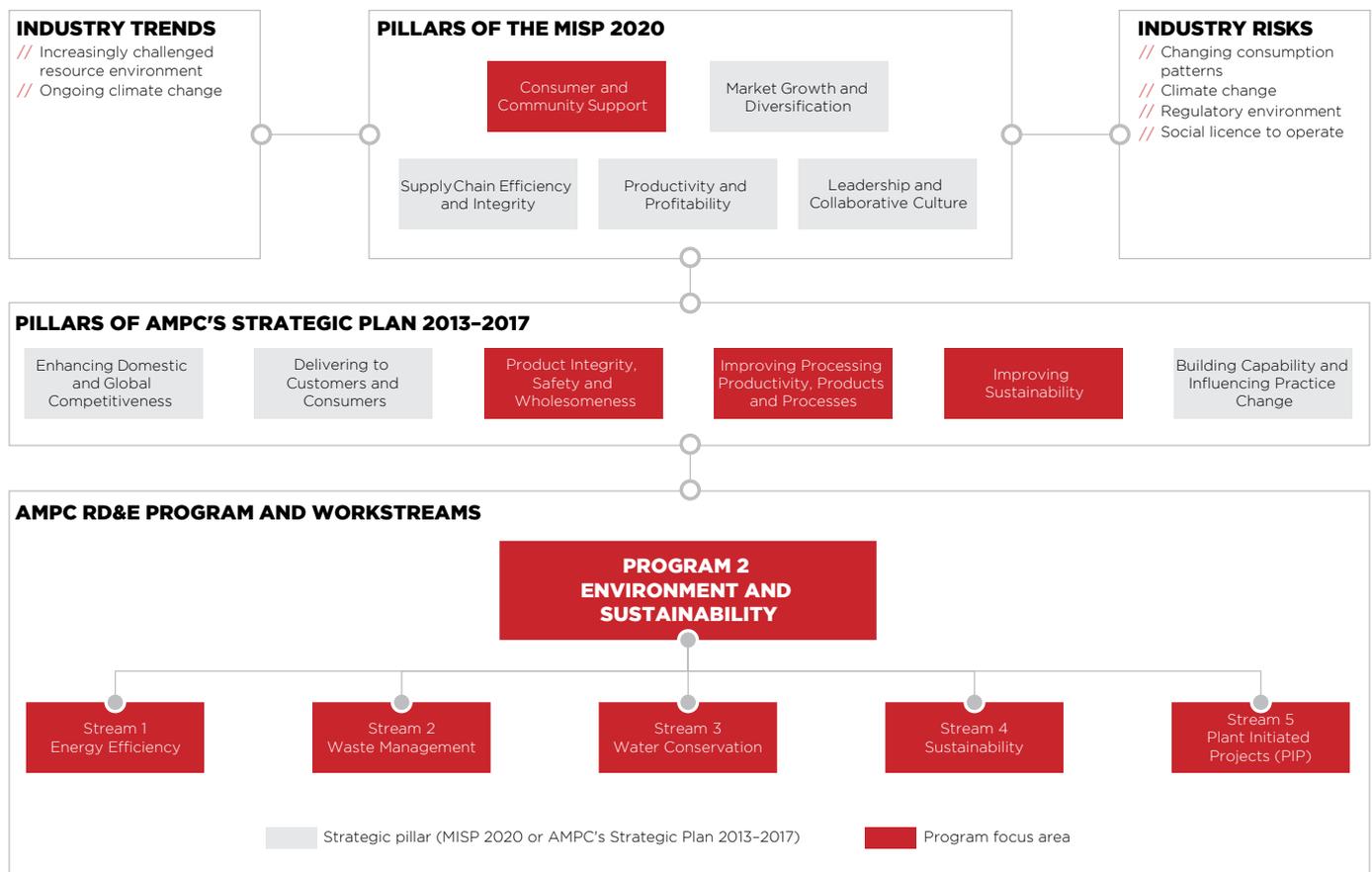


Figure 4. Elements influencing Environment and Sustainability project

Description of Workstreams	Budget <sup>1</sup>
<b>Workstream 1: Energy Efficiency</b>	<b>\$63,450</b>

**Context:**

Red meat processing facilities consume a vast amount of energy due to the need for refrigeration, steam and hot water production, which represents a significant cost as well as being a source of greenhouse gas emissions. Stewardship of environmental resources has become a major priority for the red meat industry, which requires minimising the impact on the environment and managing waste and the natural resources base.

**Objective:**

This workstream focuses on developing pioneering concepts, methodologies and products for reducing overall energy consumption within the industry and limiting greenhouse gas emissions. It considers the use of renewable energy sources instead of relying on external energy derived from fossil fuels such as coal, gas, liquefied petroleum gas, oil or diesel.

**New projects for FY2016-17:**

- // 2017-1029: Investigating steam heat recovery systems (including superheated steam systems for turbine generation) and their applicability to the red meat processing industry
- // 2017-1030: Validating baseline data for industry energy efficiency and development of an economic modelling tool to quantify and validate energy consumption

**Expected outcomes for FY2016-17:**

- // A set of reports (benchmarking, feasibility studies, techno-economic analysis, etc.) on technologies and concepts that can help to reduce energy consumption in facilities, and a creation modelling tool to quantify energy consumption in the process

<b>Workstream 2: Waste Management</b>	<b>\$285,597</b>
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**Context:**

Red meat processing is responsible for the production of liquid and solid wastes that are costly to treat and safely remove. As waste treatment technologies are currently available, they should be leveraged in abattoirs to not only reduce cost but also as an additional source of revenue by converting waste into solid and liquid biofuels, nutrients and edible or non-edible products.

**Objective:**

This workstream focuses on developing innovative products and processes to reduce waste and transform traditional waste streams into streams that add value to the industry while reducing the impact on the environment.

**New projects for FY2016-17:**

- // 2017-1037: Assessment of smouldering as an efficient and low-cost alternative for management of agricultural solid wastes
- // 2017-1031: Reviewing on-plant waste stream biomass co-digestion options and identifying technologies for optimum mixing, co-digestion and reuse
- // 2017-1032: Investigation into sensor technologies to manage waste streams and optimise the use of their by-products
- // 2017-1033: Crust management for optimal anaerobic digestion performance at meat processing facilities
- // 2017-1039: Problem to Profit: developing a sustainable feed base from agricultural wastes using single cell protein

**Expected outcomes for FY2016-17:**

- // A series of reports on products and processes for waste management
- // Proofs of concepts for laboratory-scale operations and future R&D development

<sup>1</sup> AMPC contribution to new projects in FY2016-17

**Workstream 3: Water Conservation****\$152,893****Context:**

Red meat processing requires water to ensure high levels of food safety and hygiene are maintained. The decreasing availability and the increasing cost of water are forcing plants to reduce consumption, recycle where it is safe to do so, and consider new sources where it is available.

**Objective:**

This workstream focuses on finding new products and processes to conserve water while delivering the highest food safety standards.

**New projects for FY2016-17:**

- // 2017-1034: Investigating water and wastewater reuse and recycling opportunities using the HACCP risk management framework
- // 2017-1038: Utilization of microalgae to purify waste streams and production of value-added products
- // 2017-1042: Investigating water and wastewater reuse and recycling opportunities: identification and segregation of various waste streams for recycling and reuse options
- // 2017-1035: Management, containment and reuse options for water runoff in red meat processing facilities

**Expected outcomes for FY2016-17:**

- // A set of reports on products and processes around water management — literature review, quantitative assessment and benchmarks

**Workstream 4: Sustainability****\$225,593****Context:**

Economic, social and environmental challenges place an increasing pressure on the Australian red meat industry to remain productive and competitive in the international market without compromising food safety, integrity and quality.

**Objective:**

This workstream focuses on researching new concepts, methodologies and processes that can contribute to the improvement of the industry supply chain sustainability (food safety, integrity systems, animal health and welfare, biosecurity, etc.).

**New projects for FY2016-17:**

- // 2017-1036: Quantitative risk analysis of the impact of climate variability on the Australian red meat processing industry
- // 2017-1041: AMPC sustainability report

**Expected outcomes for FY2016-17:**

- // Development of a reporting tool on the animal welfare certification system
- // Reports on sustainability in the red meat industry and on the impact of climate change on the Australian red meat processing industry

**Workstream 5: PIPs****Context:**

AMPC supports its members in identifying and undertaking RD&E projects that benefit the international competitiveness of the Australian red meat processing industry, e.g. site or business-level RD&E activities and the areas that will enable the sustainable development of the business (energy management, water management, waste management, planning for extreme climate events, biosecurity, animal welfare, etc.).

**AMPC contribution to new projects in FY2016-17****\$727,533**

# PROGRAM 3: PROCESSING HYGIENE, QUALITY AND MEAT SCIENCE

**Program 3**

# PROCESSING HYGIENE, QUALITY AND MEAT SCIENCE

In the past decades and regardless of the industry, customer expectations for product integrity and quality have grown. In the red meat industry where competition is increasing, demonstrating high product integrity standards for food safety has become a key differentiating factor for Australian meat processors.

This program responds to the need to ensure the continuous delivery of high standards of food safety, product integrity and eating quality.

As illustrated in Figure 5, the projects under this program are driven by the MISP 2020, AMPC’s Strategic Plan 2013–2017, industry trends and strategic risks, and aims to:

- // Expand RD&E towards food safety to ensure that food safety systems and practices are the trademark of Australian products
- // Maintain and enhance efficient product integrity standards and quality assurance systems
- // Maintain and enhance world-class traceability systems
- // Exercise sound science to underpin biosecurity, residue management and animal health standards
- // Demonstrate high standards of animal welfare standards
- // Maintain and enhance efficient food safety and product integrity standards
- // Develop new meat products while delivering wholesome and consistent eating quality

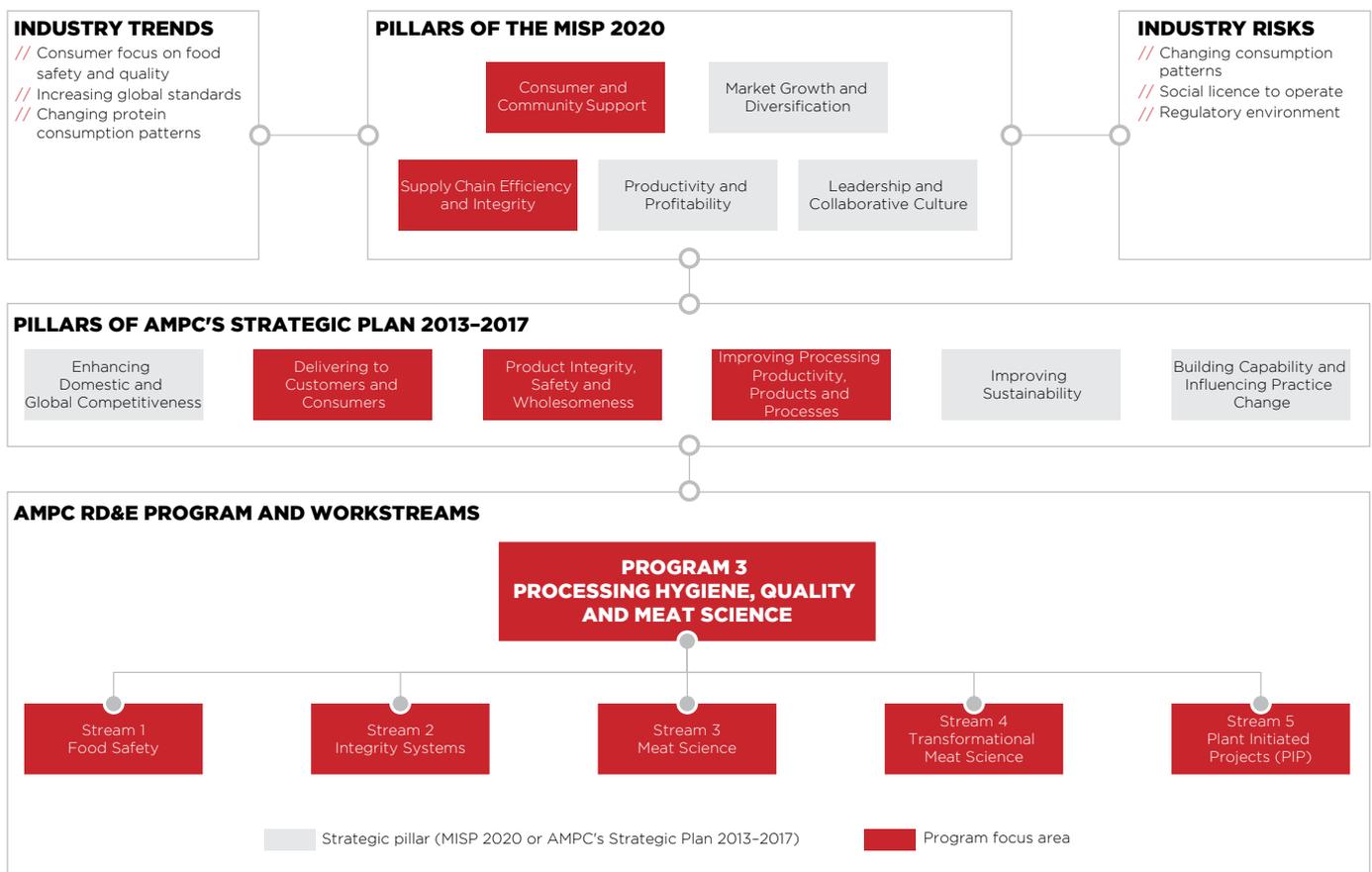


Figure 5. Elements influencing Processing Hygiene, Quality and Meat Science projects

Description of Workstreams	Budget <sup>1</sup>
<b>Workstream 1: Food Safety</b>	

Food safety systems are a critical component of the red meat supply chain and a key driver of exports. Therefore, they should deliver the appropriate level of protection to the market and ensure that this level of protection is constantly reviewed against public health data and requirements.

AMPC is undertaking a series of project initiatives to ensure that technologies and tools comply with industry standards, demonstrate food safety and respond to safety risks. These projects are now being managed by AMPC under the Joint Program and project outputs will be shared with MLA to maximise information sharing and lifting capability, and ensuring value chain integration and benefits for the entire industry.

<b>Workstream 2: Integrity Systems</b>	<b>\$97,200</b>
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**Context:**

Australia enjoys an enviable reputation in the international market for producing clean and safe premium quality meat, thanks to the integrity of its underlying food safety systems.

**Objective:**

This workstream focuses on developing and implementing systems and technologies that ensure traceability, biosecurity, disease risk mitigation, strong animal health and hygiene, and overall meat quality standards.

**New projects for FY2016-17:**

// 2017-1051: Oesophagus (and bung) heat sealing, medical tool conversion – Phase 2 (technology design)

**Expected outcomes for FY2016-17:**

// Delivery of an enhanced carcase grading system

// Publications of reports in regards to the TSEFAP activity

<b>Workstream 3: Meat Science</b>	<b>\$70,000</b>
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**Context:**

Production of high-quality meat is underpinned by a robust understanding of meat properties and qualities, such as meat tenderness, colour, pH, intramuscular fat, etc. Therefore, investments into meat science disciplines appear to be an imperative for the future expansion of quality standards for Australian meat, both nationally and internationally.

**Objective:**

This workstream focuses on technologies and practices that help measure, monitor and improve meat qualities and properties.

**New projects for FY2016-17:**

// 2017-1056: Shelf-life extension of fresh meat products using high pressure processing

// 2017-1044: Can on-site beef dark cutting evaluation (monitoring) be improved and value-added? (study and assessment)

// 2017-1048: A practical means to accelerate beef ageing and sustain acceptable eating quality and safety: chilled storage temperature manipulation

// 2017-1006: Intelligent solutions for boxed beef trim export enhancement

**Expected outcomes for FY2016-17:**

// A set of reports related to meat science (literature review, quantitative assessment, technology review, cost-benefit analysis, benchmarking, etc.)

// Industry recommendations in relation to optimising carcase yield, animal welfare and meat quality

<sup>1</sup> AMPC contribution to new projects in FY2016-17

**Workstream 3: Meat Science (continued)**

- // Proof of concept of automated systems for detection of animals in stress while in lairage for further development
- // Prototype developments for automated inspection and cleaning of livestock before slaughter

**Workstream 4: Transformational Meat Science (TMS)**

**N/A**

**Context:**

Unanticipated scientific findings often push the boundaries of knowledge further than planned research.

**Objective:**

This workstream is dedicated to disruptive meat science. The projects under this workstream investigate basic meat properties (such as structure and colour at a molecular level) and research how advanced technologies can be used to improve these properties.

**New projects for FY2016-17:**

- // No new projects initiated in FY2016-17

**Expected outcomes for FY2016-17:**

- // A set of reports, research and findings on TMS

**Workstream 5: PIPs**

AMPC supports its members in identifying and undertaking RD&E projects that benefit the international competitiveness of the Australian red meat processing industry, e.g. site or business-level RD&E activities and areas that will ensure food safety, quality and integrity.

**AMPC contribution to new projects in FY2016-17**

**\$167,200**



# PROGRAM 4: CAPABILITY, EXTENSION AND EDUCATION

**Program 4**

# CAPABILITY, EXTENSION AND EDUCATION

The value of R&D is only achieved when outcomes are taken up and successfully implemented by enterprises along the value chain. In the geographically dispersed red meat industry, achieving the desired outcomes from each R&D program will require collaboration, trust and sharing of insights across Australia.

This program aims to build on the expertise of people in the industry by delivering cost-effective improvements in capability, extension and education.

As illustrated in Figure 6, the projects under this program are driven by the MISP 2020, AMPC’s Strategic Plan 2013–2017, industry trends and strategic risks, and aim to:

- // Engage key stakeholders to create awareness and demonstrate value
- // Increase industry capability and capacity
- // Increase research capability and capacity
- // Evaluate RD&E outcomes
- // Investigate, understand, communicate and respond to changes and influences in the red meat processing industry

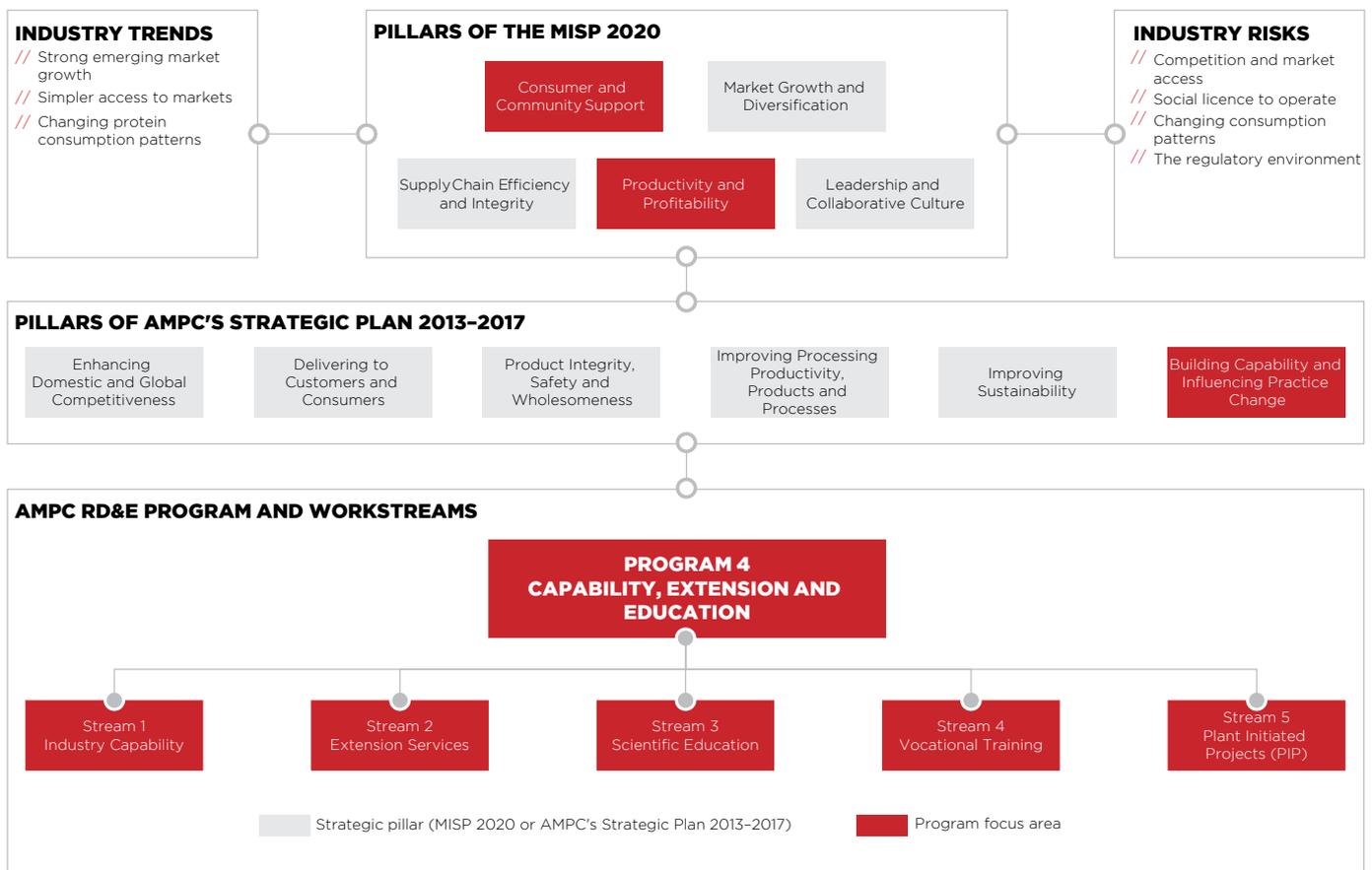


Figure 6. Elements influencing Capability, Extension and Education projects

Description of Workstreams	Budget <sup>1</sup>
<b>Workstream 1: Industry Capability</b>	<b>\$463,955</b>

**Context:**

Developing capabilities within the red meat processing sector and amongst its personnel is key to its sustainability. Hence, AMPC has identified the importance of understanding the education and capability gaps that can exist among medium and small processors in order to tailor training resources accordingly.

**Objective:**

This workstream identifies the training, education and capability gaps that exist and develops new initiatives to fill those gaps. This will be done through both face-to-face training and online extension programs.

**New projects for FY2016-17:**

- // 2017-1010: Ammonia refrigeration training programs
- // 2017-1015: Leveraging strategic energy projects to enhance productivity at red meat processing plants (implementation)
- // 2017-1019: 'Meat. Your. Future.' (Promoting Australia's red meat processing industry: developing a structured approach to improving community perceptions of the industry)
- // 2017-1020: 'Meat Matters! We all have a steak in this!' (extension of information resources on the red meat processing industry to primary and secondary schools)
- // 2017-1023: Provisional business cases to determine appropriate models for a world class red meat processing centre of excellence
- // 2017-1077: An integrated scholarship program in water, water re-use and environment
- // 2017-1024: Developing a model for meat inspection and quality assurance employment outcomes for university graduates and undergraduates
- // 2017-1026: Analysis of the existing technologies developed in artificial intelligence and case study to develop capabilities around automated animal health assessment and meat inspection
- // 2017-1082: Developing a model to support the employment of migrants and refugees in the Australian meat processing industry

**Expected outcomes for FY2016-17:**

- // Roll-outs of two new training programs
- // Definition of a communication plan and delivery of campaigns to enhance community perceptions on careers in the meat industry
- // Development and validation of educational resources on the red meat industry supply chain for primary and secondary schools
- // Delivery of a business case, including financial modelling for a red meat processing innovation centre

<b>Workstream 2: Extension Services</b>	<b>\$607,854</b>
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**Context:**

One of the main challenges identified to remain competitive in the meat industry is to ensure that the outcomes of research and development are successfully communicated and disseminated among processors to promote implementation.

**Objective:**

This workstream supports the extension and adoption strategies to ensure R&D outputs deliver the expected value to the overall industry.

**New projects for FY2016-17:**

- // 2017-1002: Meat industry environment network (network enhancement and implementation)

<sup>1</sup> AMPC contribution to new projects in FY2016-17

**Workstream 2: Extension Services (continued)**

- // 2017-1004: Meat industry engineering network (network enhancement and implementation)
- // 2017-1005: Meat inspection and quality assurance network (network enhancement and implementation)
- // 2017-1007: Meat industry training network (network enhancement and implementation)
- // 2017-1073: Facilitation of the QCMPA network (network enhancement and implementation)
- // 2017-1028: Management of the Australian Q Fever Register
- // 2017-1018: Development of an online virtual abattoir for education and training
- // 2017-1001: Meat industry efficiency and innovation capacity enhancement; benchmarking technologies and systems from automotive industry
- // 2017-1012: MINTRAC provision of extension services to red meat processors 2016-2017

**Expected outcomes for FY2016-17:**

- // Implementation of a series of networks to showcase results from RD&E projects such as technologies and training materials of interest to the industry
- // Provision of additional services to the benefits of all facilities including forums, training materials and committees

**Workstream 3: Scientific Education**

**\$317,875**

**Context:**

Improving collaboration with the government, Rural Research and Development Corporations (RDCs) and educators can lead to significant results such as innovative development, reducing duplication and improved efficiency.

**Objective:**

This workstream focuses on fostering professionals who contribute to industry innovation. This will be achieved by investing in scholarship programs (undergraduates, postgraduates and post-doctorates) while promoting the intent of undertaking research careers in the red meat processing industry.

**New projects for FY2016-17:**

- // 2017-1076: Meat science centre for upskilling the meat industry in the production of high-quality meat
- // 2017-1075: Elite meat undergraduate scholarship program
- // 2017-1074: Creation of an integrated scholarship program in red meat safety and microbiology

**Expected outcomes for FY2016-17:**

- // Definition of projects' strategy and action plan
- // Commencement of work and mobilisation on scholarship programs

**Workstream 4: Vocational Training**

**\$373,458**

**Context:**

The red meat processing industry faces continual changes to operating market access and regulatory requirements, which result in the need for ongoing professional development and training for employees in a context where it is difficult to attract and retain highly skilled personnel.

**Objective:**

This workstream focuses on building and retaining capability within the industry and providing vocational training and upskilling opportunities for plant staff.

**New projects for FY2016-17:**

- // 2017-1078: Australian agribusiness leadership program
- // 2017-1017: Mobile apps development for the Australian meat processing industry

Description of Workstreams	Budget <sup>1</sup>
<b>Workstream 4: Vocational Training (continued)</b>	
<ul style="list-style-type: none"> <li>// 2017-1008: Meat processing professional development program</li> <li>// 2017-1016: Professional development training webinars for QA Managers</li> <li>// 2017-1021: Protecting Australia’s meat processing industry: crisis management and development of a proactive approach to potential disease outbreaks and exotic species incursion</li> <li>// 2017-1013: Redeveloping the core unit CDs into online resources for meat processors</li> <li>// 2017-1027: Updating extension materials of interest to the red meat processing industry</li> <li>// 2017-1080: 2017 ABARES science innovation awards</li> <li>// 2017-1079: Australian rural leadership program – Course 24</li> <li>// 2017-1083: Scholarships for an advanced diploma in meat processing (meat industry training network)</li> </ul>	
<b>Expected outcomes for FY2016-17:</b>	
<ul style="list-style-type: none"> <li>// Delivery of training, including face-to-face trainings, online training tools and support, mobile app and webinars</li> </ul>	
<b>Workstream 5: PIPs</b>	
<p>AMPC supports its members in identifying and undertaking RD&amp;E projects that benefit the international competitiveness of the Australian red meat processing industry, including business-specific capability building, training and educational initiatives to be implemented on site.</p>	
<b>AMPC contribution to new projects in FY2016-17</b>	<b>\$1,763,141</b>



<sup>1</sup> AMPC contribution to new projects in FY2016-17

PROGRAM 5:  
INDUSTRY  
IMPROVEMENT  
AND ECONOMIC  
ANALYSIS

**Program 5**

# INDUSTRY IMPROVEMENT AND ECONOMIC ANALYSIS

In the red meat industry where the economic and environmental landscape is rapidly evolving, understanding the levers for industry improvement is a fundamental requirement.

This program provides a high-level evaluation of the investments and mechanisms required to improve industry performance, including economic modelling, statistical analysis, benchmarking and networked information flows.

As illustrated in Figure 7, the projects under this program are driven by the MISP 2020, AMPC’s Strategic Plan 2013–2017, industry trends and strategic risks, and aim to:

- // Investigate, understand, communicate and respond to changes and influences in the red meat processing industry
- // Ensure that business sustainability and continuity is enhanced
- // Develop research output packages related to industry improvement aimed at encouraging industry practice change around regulatory cost and information management throughout the supply chain

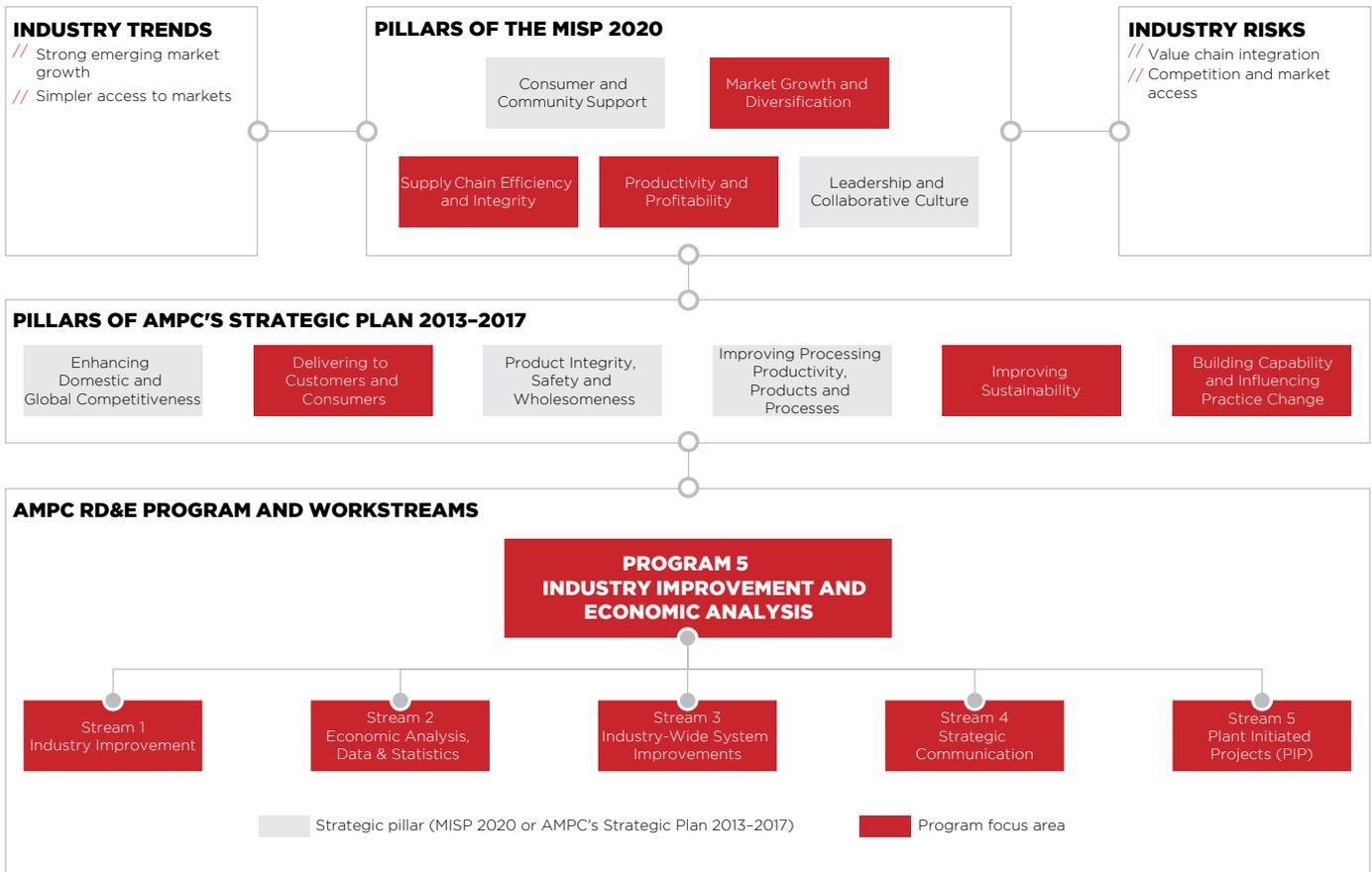


Figure 7. Elements influencing Industry Improvement and Economic Analysis projects

Description of Workstreams	Budget <sup>1</sup>
<b>Workstream 1: Industry Improvement</b>	<b>\$37,500</b>

**Context:**

As competition is growing in the meat industry, the need for competitiveness analysis, benchmarking studies and quantification of economic factors associated with regulatory compliance, industry marketing, energy policy, carbon emissions and infrastructure investment is inevitable.

**Objective:**

This workstream focuses on performing research and analysis to improve the overall performance (productivity, profitability and sustainability) of the Australian meat processing industry against its international competitors.

**New projects for FY2016-17:**

// 2017-1066: Electronic data collection for meat inspection (database development and trial for small to medium sheep processing plants)

**Expected outcomes for FY2016-17:**

// A series of reports including risk analysis, data collection and market analysis in regards to industry improvements

<b>Workstream 2: Economic Analysis, Data and Statistics</b>	<b>\$137,650</b>
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**Context:**

Understand the economic drivers of the industry, e.g. drivers of supply and demand to best prepare for the increasing competition.

**Objective:**

This workstream focuses on understanding the economic drivers of the industry and generating economic models for the red meat supply chain in order to better assess supply and demand, constraints and opportunities.

**New projects for FY2016-17:**

// 2017-1067: Investigation of options and development of models for industry supply chain information system standards and programs

// 2017-1098: Red meat industry risk analysis 2016

**Expected outcomes for FY2016-17:**

// Report on potential new economic models

<b>Workstream 3: Industry-Wide System Improvements</b>	<b>\$119,578</b>
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**Context:**

The red meat industry systems have evolved over time ensuring sustainability. It is imperative for AMPC that the industry maintain its competitiveness and leadership moving forward.

**Objective:**

This workstream focuses on identifying mechanisms by which the Australian red meat processing sector can become more competitive through industry-wide system improvements with a focus on areas where industry-wide reputation is critical to export success.

**New projects for FY2016-17:**

// 2017-1062: Development of economic model for analysis of regulatory and related costs and duplication in red meat processing

<sup>1</sup> AMPC contribution to new projects in FY2016-17

Description of Workstreams	Budget <sup>1</sup>
<b>Workstream 3: Industry-Wide System Improvements (continued)</b>	
// 2017-1097: RRD4P Round 2–Accelerating precision agriculture to decision agriculture	
<b>Expected outcomes for FY2016–17:</b>	
// Reports on industry-wide system improvements	
<b>Workstream 4: Strategic Communications</b>	<b>\$43,531</b>
<b>Context:</b>	
Managing relationships and communication with key stakeholders is a requirement to increase AMPC’s visibility and differentiate it from similar organisations.	
<b>Objective:</b>	
This workstream focuses on producing strategic marketing communications based on a three year plan to substantially lift AMPC’s visibility, and to differentiate it from other meat industry organisations.	
<b>New projects for FY2016–17:</b>	
// 2017-1061: Social impact study of red meat processing in Australia (assessment of the ARMPI social impact)	
<b>Expected outcomes for FY2016–17:</b>	
// A series of strategic communications and publications that highlight AMPC’s competitiveness	
<b>Workstream 5: PIPs</b>	
AMPC supports its members in identifying and undertaking RD&E projects that benefit the international competitiveness of the Australian red meat processing industry through improvement and economic analysis.	
<b>AMPC contribution to new projects in FY2016–17</b>	<b>\$338,259</b>



<sup>1</sup> AMPC contribution to new projects in FY2016–17

# PROGRAM 6: JOINT PROGRAM

**Program 6**

# JOINT PROGRAM

The Joint Program is a collaboratively funded RD&E, marketing and market access program between AMPC and MLA.

The program generates value chain outputs and supports sustainability, food safety and eating quality as well as increasing demand for meat products. Examples of value chain outputs are on-plant trainings and the development of technologies that reduce the level of dark cutting meat.

Projects within the Joint Program depend on processor and producer levies and government funding.

As illustrated in Figure 8, the projects under this program are driven by the MISP 2020, AMPC’s Strategic Plan 2013–2017, industry trends and strategic risks, and aim to:

- // Improve sustainability
- // Enhance national and international competitiveness
- // Delivering product integrity, safety and wholesomeness
- // Improve processing productivity, products and processes

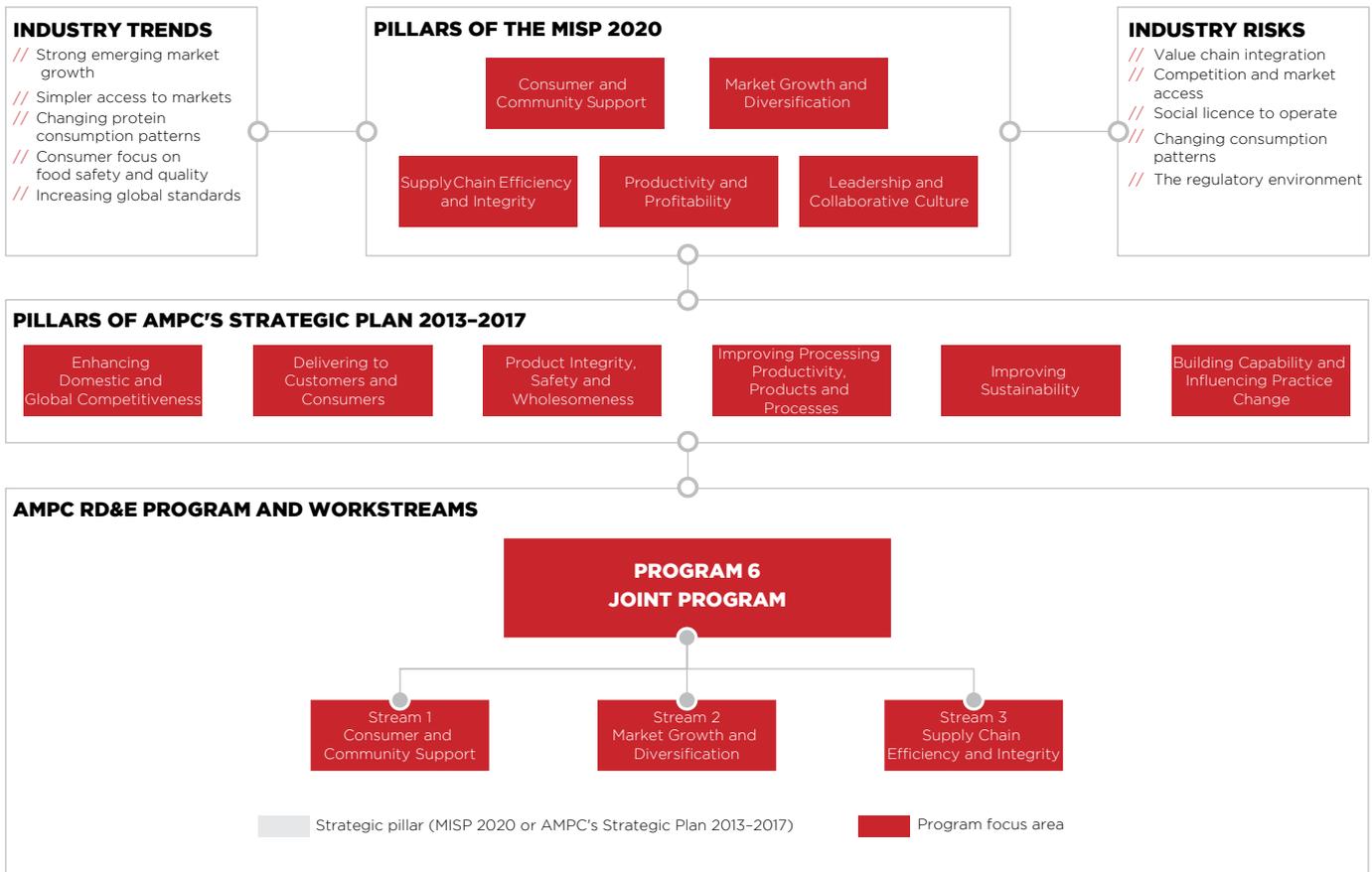


Figure 8. Elements influencing Joint Program projects

Description of Workstreams	Budget <sup>1</sup>
<b>Workstream 1: Consumer and Community Support</b>	<b>\$619,651</b>

**Context:**

Societal expectations and the demographics of the community are changing both nationally and internationally and imply major shifts in demand, including an overall reduction in per capita meat consumption.

**Objective:**

This workstream aims at enhancing and communicating the value proposition of the red meat industry to customers, consumers and community, and demonstrate the importance of red meat in a healthy diet.

**New area for FY2016-17:**

// Red meat in a healthy diet (promoting communications and publications)

**Expected outcomes for FY2016-17:**

// Development of practical education tools to promote and support consumption of red meat in a healthy and balanced diet

// Publications supporting benefits of red meat in a healthy diet

<b>Workstream 2: Market Growth and Diversification</b>	<b>\$5,946,655</b>
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**Context:**

Strategies for unlocking market potential and research to address current or emerging market access barriers are of major importance to the red meat processing industry's sustainability, profitability and future net value.

**Objective:**

This workstream aims to develop and deliver market insights, and promote red meat nationally and internationally.

**New areas for FY2016-17:**

// Market access analysis

// Innovation insights on product and packaging

// Marketing and promotion analysis in export markets

// Marketing and promotion analysis in the national market

**Expected outcomes for FY2016-17:**

// A series of studies and reports from international benchmarking, market analysis, assessments and product insights

// Development of advocacy plans to support industry, reduce economic barriers and maintain favourable access conditions

<b>Workstream 3: Supply Chain Efficiency and Integrity</b>	<b>\$3,656,359</b>
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**Context:**

MLA and AMPC are working collaboratively to ensure the entire supply chain is at the leading edge of knowledge and practice in terms of safety, integrity and cost competitiveness.

**Objective:**

This workstream focuses on conducting scientific research that supports food safety, assurance systems and meat and livestock integrity. Investments in projects aim to develop technologies improving productivity and profitability.

<sup>1</sup> AMPC contribution to new projects in FY2016-17

Description of Workstreams	Budget <sup>1</sup>
<b>Workstream 3: Supply Chain Efficiency and Integrity (continued)</b>	

**New areas for FY2016-17:**

*Focus: Objective Measurement*

- // 2017-1058: Contemporary chemical lean validation – national standard for measurement\*
- // 2017-1046: Accelerated tenderisation of red meat for raw meat and food service applications\*
- // 2017-1040: Non-invasive prediction of Dark Cutting\*
- // 2017-1011: Non-invasive measurement of meat quality in live animals using deep tissue raman spectroscopy\*
- // 2017-1057: Feasibility investigation for dynamic 3D-model of the carcass skeletal structure\*
- // 2017-1070: An online system to assess beef quality characteristics (evaluate the TenderSpec™ Beef Classification System)\*
- // RnD4Profit-15-02-014: Wealth for health\*
- // Improving productivity and profitability across supply chain (via tool development to enable prediction of 75% of the key meat language attributes on live animals at multiple ages across variable breed composition and sex)
- // 2017-1100: Development and validation of a probe for measuring fat in lamb carcasses\*

*Focus: Food Safety RD&E*

- // 2017-1068: Process control monitoring – is there a better way?\*
- // 2017-1009: Real-time spectroscopic system for contaminant detection in red meat (system design and implementation)\*
- // 2017-1053: Hyperspectral ZT and food safety determination – Phase 2 (feasibility and assessment)\*
- // 2017-1049: Lab-on-a-chip system for microbial contamination (technology development for faster detection of specific microorganisms on carcasses)\*
- // 2017-1071: Identifying strategies for regulator awareness – Development and delivery of workshops on Industry systems and practices (including food safety and meat quality) for regulators\*
- // 2017-1072: Identifying strategies for regulator awareness – Delivery model assessment, development and delivery of training to on-plant regulators on Industry systems and practices (including food safety and meat quality)\*
- // Cofounded Food Safety RD&E

*Focus: Others*

- // National Livestock Identification System
- // Industry Integrity Systems

**Expected outcomes for FY2016-17:**

- // A series of studies from operational feasibility, cost-benefit analysis and market assessments
- // Development and delivery of workshops on industry systems and practices (including food safety and meat quality) for regulators
- // Development and delivery of training to on-plant regulators on industry systems and practices (including food safety and meat quality)
- // A series of reports and research on innovative technologies that could be used to improve industry efficiency and productivity
- // Further development of novel technologies that improve objective carcass measurement
- // Export shipping trials to evaluate product integrity and safety
- // Establishment of a measure to assess hygienic production

<sup>1</sup> AMPC contribution to new projects in FY2016-17

**Workstream 3: Supply Chain Efficiency and Integrity (continued)**

- // Development and application of a new device to prevent pathogens and contaminant
- // A series of testing of new technology and devices for potential future developments

\* Project entirely funded and managed by AMPC

**AMPC contribution to new projects in FY2016-17**

**\$10,222,665**





# BUDGET FY2016-17

SUMMARY OF AMPC, MLA AND GOVERNMENT CONTRIBUTION TO NEW PROJECTS IN FY2016-17

<b>1</b>	<b>Processing Technologies</b>	<b>AMPC contribution</b>	<b>Total investment</b>
1.1	Productivity and Quality	\$856,389	\$1,712,778
1.2	Sensing and Analysis	-	-
1.3	Materials Handling	\$224,250	\$448,500
1.4	Value Added	\$63,855	\$127,710
	<b>Total</b>	<b>\$1,144,494</b>	<b>\$2,288,988</b>

<b>2</b>	<b>Environment and Sustainability</b>	<b>AMPC contribution</b>	<b>Total investment</b>
2.1	Energy Efficiency	\$63,450	\$126,900
2.2	Waste Management	\$285,597	\$571,193
2.3	Water Conservation	\$152,893	\$305,786
2.4	Sustainability	\$225,593	\$451,186
	<b>Total</b>	<b>\$727,533</b>	<b>\$1,455,065</b>

<b>3</b>	<b>Processing Hygiene, Quality and Meat Science</b>	<b>AMPC contribution</b>	<b>Total investment</b>
3.1	Food Safety <sup>1</sup>	-	-
3.2	Integrity Systems	\$97,200	\$194,400
3.3	Meat Science	\$70,000	\$140,000
3.4	Transformational Meat Science	-	-
	<b>Total</b>	<b>\$167,200</b>	<b>\$334,400</b>

<b>4</b>	<b>Capability, Extension and Education</b>	<b>AMPC contribution</b>	<b>Total investment</b>
4.1	Industry Capability	\$463,955	\$927,910
4.2	Extension Services	\$607,854	\$1,215,708
4.3	Scientific Education	\$317,875	\$635,749
4.4	Vocational Training	\$373,458	\$746,915
	<b>Total</b>	<b>\$1,763,141</b>	<b>\$3,526,282</b>

<b>5</b>	<b>Industry Improvement and Economic Analysis</b>	<b>AMPC contribution</b>	<b>Total investment</b>
5.1	Industry Improvement	\$37,500	\$75,000
5.2	Economic Analysis, Data and Statistics	\$137,650	\$275,300
5.3	Industry-Wide System Improvements	\$119,578	\$239,156
5.4	Strategic Communications	\$43,531	\$87,062
	<b>Total</b>	<b>\$338,259</b>	<b>\$676,518</b>

<b>6</b>	<b>Joint Program</b>	<b>AMPC contribution</b>	<b>Total investment</b>
6.1	Consumer and Community Support	\$619,651	\$1,609,223
6.2	Market Growth and Diversification	\$5,946,655	\$57,481,902
6.3	Supply Chain Efficiency and Integrity	\$3,656,359	\$14,651,989
	<b>Total</b>	<b>\$10,222,665</b>	<b>\$73,743,114</b>

<b>Plant Initiated Projects (PIP)</b>		<b>AMPC contribution</b>	<b>Total investment</b>
PIP Investments <sup>2</sup>		\$4,000,000	\$16,000,000
<b>Total</b>		<b>\$4,000,000</b>	<b>\$16,000,000</b>

## AMPC'S BUDGET FOR FY2016-17

**Budgeted income and costs for FY2016-17**

	<b>RD&amp;E funds<sup>4</sup></b>	<b>Marketing funds<sup>5</sup></b>	<b>Pre-statutory funds<sup>6</sup></b>	<b>Total</b>
<b>Income</b>				
Industry levies	\$12,594,851	\$7,084,604	-	\$19,679,455 <sup>3</sup>
Interest income	\$1,594,053	-	\$287,805	\$1,881,858
<b>Total</b>	<b>\$14,188,904</b>	<b>\$7,084,604</b>	<b>\$287,805</b>	<b>\$21,561,313</b>

	<b>RD&amp;E funds<sup>4</sup></b>	<b>Marketing funds<sup>5</sup></b>	<b>Pre-statutory funds<sup>6</sup></b>	<b>Total</b>
<b>Program costs</b>				
1 Processing Technologies	\$1,144,494	-	-	\$1,144,494
2 Environment and Sustainability	\$727,533	-	-	\$727,533
3 Processing Hygiene, Quality and Meat Science	\$167,200	-	-	\$167,200
4 Capability, Extension and Education	\$1,763,141	-	-	\$1,763,141
5 Industry Improvement and Economic Analysis	\$338,259	-	-	\$338,259
6 Joint Program	\$4,344,125	\$5,878,540	-	\$10,222,665
Plant Initiated Projects <sup>2</sup>	\$4,000,000	-	-	\$4,000,000
Carry-over costs from FY2015-16	\$1,548,000	-	-	\$1,548,000
<b>Total program costs</b>	<b>\$14,032,752</b>	<b>\$5,878,540</b>	<b>-</b>	<b>\$19,911,292</b>

<b>Corporate costs</b>				
Direct corporate costs <sup>6</sup>	\$711,151	-	-	\$711,151
Indirect corporate costs <sup>7</sup>	\$1,012,496	\$2,501,540	-	\$3,514,036
<b>Total corporate costs</b>	<b>\$1,723,647</b>	<b>\$2,501,540</b>	<b>-</b>	<b>\$4,225,187</b>
<b>Budget balance</b>	<b>\$(1,567,494)</b>	<b>\$(1,295,476)</b>	<b>\$287,805</b>	<b>\$(2,575,166)</b>

**Accumulated funds movements for FY2016-17**

	<b>RD&amp;E funds<sup>4</sup></b>	<b>Marketing funds<sup>5</sup></b>	<b>Pre-statutory funds<sup>6</sup></b>	<b>Total</b>
Accumulated funds as at 30 June 2016	\$37,897,031	\$(616,976)	\$6,157,343	\$43,437,398
AOP balance FY2016-17	\$(1,478,494)	\$(1,295,476)	\$287,805	\$(2,486,166)
Estimated accumulated funds as at 30 June 2017	\$36,418,536	\$(1,912,452)	\$6,445,148	\$40,951,233

<sup>1</sup> Investments within 3.1 Food Safety are included in 6.3 Supply Chain Efficiency and Integrity, due to the joint approach undertaken in this workstream

<sup>2</sup> The PIP contributions are 25% AMPC, 25% Processor and 50% government matching

<sup>3</sup> Levy revenue is directly linked to industry supply, which is forecast to decline at the time of publication

<sup>4</sup> Research, development and extension funds as defined by Statutory Funds Agreement 2011-15

<sup>5</sup> Marketing funds as defined by Statutory Funds Agreement 2011-15

<sup>6</sup> Pre-statutory funds accumulated from voluntary members' contribution before the Statutory Funding Agreement 2007-10

<sup>7</sup> Direct corporate costs include personnel and associated costs directly related to the management of industry projects

<sup>8</sup> Indirect corporate costs cover general expenses, corporate communications, business operations and improvements, other personnel costs, Board of Director's fees, and financial and accounting charges



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