



Australian Government  
Department of Agriculture,  
Water and the Environment

## HEALTH 4 WEALTH | A RESEARCH PROJECT

*Enhancing Supply Chain Profitability through Reporting and  
Utilisation of Peri-Mortem Information by Livestock  
Producers*

### EVAUATION PLAN

March 2022

RURAL RESEARCH AND DEVELOPMENT FOR PROFIT PROGRAM



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# Introduction

## Project

Project title	Enhancing supply chain profitability through reporting and utilization of peri-mortem information by livestock producers
Project number	RnD4Profit-15-02-014

## Grantee

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## Purpose

This Evaluation Report is part of the suite of activities for the *Enhancing supply chain profitability through reporting and utilization of peri-mortem information by livestock producers* project. The purpose of the Report is to evaluate the success of the project in meeting the project objectives.

This report forms part of the collection of project management documents along with the risk profile, governance structure and communication plan. This report is also aimed to support and provide input into the evaluation of the overarching Rural Research and Development for Profit Programme.

# Rural R&D for Profit Programme Outcomes and Measures

The *Enhancing supply chain profitability through reporting and utilization of peri-mortem information by livestock producers* project has been funded under the Rural R&D for Profit Program. The objective of the Rural R&D for Profit Program is to fund collaborative research and development to support continued innovation in Australia's primary industries. This project has addressed the following Rural R&D for Profit Program outcomes:

## **Generating knowledge, technologies, products or processes that benefit primary producers**

- A business case and a subsequent cost benefit analysis for a peri-mortem data capture and reporting system that meets the needs of relevant stakeholders across the beef, goatmeat, pork and sheepmeat supply chains and that considers all of the risks and rewards arising from such a system has been delivered.
- A voluntary Standards and software infrastructure that can be used to collect and consistently report the causes and prevalence of disease-related carcass (total and partial) and offal condemnations during ante- and post-mortem inspections, together with associated pathology, to producers by processors have been developed. These Standards have been developed to allow the correlation of certain disease/parasite conditions with meat yield and offal recoveries in terms of both quantity and quality. Draft business rules were used during the project that detail the type and extent of condemnation information collected by processors.

## **Strengthening pathways to extend the results of rural R&D, including understanding the barriers to adoption**

- Pilot studies at 10 processing plants that identified the challenges and barriers to implementing the standards and software modules and that recommend solutions before rollout of a national feedback system
- A national extension and adoption strategy that provide agreed outputs to be integrated into Australia's livestock production, meat inspection and verification systems. This allows for the cross-sector implementation of common reporting frameworks which in turn will maximise the efficiencies of on-farm production through animal health data capture, analysis, reporting and extension.

## **Establishing and fostering industry and research collaborations that form the basis for ongoing innovation and growth of Australian agriculture**

The project has fostered industry and research collaborations between the:

- Cattle, sheep goatmeat and pork industries

- Australian Meat Processors Corporation, Australian Pork Limited and Meat & Livestock Australia
- Department of Economic Development, Jobs, Transport and Resources, Victoria and the South Australian Research & Development Institute.

The project surpassed its initial aims by establishing and fostering industry and research collaboration beyond these organisations to include 15 additional research and consultancy companies, public health and livestock veterinarians, processing companies, software providers and training organisations across the cattle, sheep goatmeat and pork industries. This in turn will strengthen the pathways to extend the results of the *Enhancing supply chain profitability through reporting and utilization of peri-mortem information by livestock producers* project as the organisations continue to work together in this area into the future.

# Evaluation

This Evaluation Report has been completed based on the project's Monitoring and Evaluation Plan and the level of achievement mapped against the measurables set out in the project Operations Plan.

The Monitoring and Evaluation Plan included evaluation questions that have been used as the basis for assessing whether the *Enhancing supply chain profitability through reporting and utilization of peri-mortem information by livestock producers* project outcomes were achieved. These evaluation questions were developed around the categories of impact, appropriateness, efficiency, effectiveness, and legacy.

- Effectiveness refers to the extent to which a program's intended results have been achieved.
- Appropriateness compares the environmental context or need on the one hand with the objectives and strategies of the program to determine whether the latter are relevant to the former.
- Impact considers the outcome, or result of having done the planned actions, and considers any changes occurring as a result of the project.
- Efficiency refers to the extent to which activities, outputs (products, services) and the desired results are achieved with the lowest possible use of resources/inputs (financial, people, time).
- Legacy examines whether the actions/project will continue to have an impact after the project's completion.

The detailed assessment against these questions is included in Table 1.

The Operations Plan provided outcomes against the project activities, and key performance indicators to deliver those outcomes. As such a quantitative and qualitative assessment has been conducted against the key performance indicators in Table 2. In addition, this assessment provides a link to the evidence that supports this assessment.

**Table 1: Assessment of the Project success against the Evaluation Questions**

Evaluation Questions	What aspects of the project will be measured and tested?	Assessment of the Project
<p><b>Effectiveness</b>  <i>To what extent were the planned activities and measures achieved?</i></p>	<p><i>KPIs/milestones met</i></p>	<p><i>The planned activities and measurement were predominantly achieved. These are detailed in Table 2.</i></p>
<p><i>What, if any, lessons have been learned that could improve the success of future projects?</i></p>		<p><i>Lessons learn from the projects are detailed in Table 3.</i></p>
<p><i>To what extent did the project achieve the desired result within budget and timeframes?</i></p>	<p><i>Project completed on time and within budget</i></p>	<p><i>Sub-projects were predominantly delivered on time. The overall project was delayed and an extension project due to the impact of COVID.</i></p>
<p><i>Were the planned actions performed, and to the standard expected?</i></p>		<p><i>Sub-projects were contracted including expected deliverables to meet the objectives of the project. No sub-projects were cancelled, and all met their required deliverables.</i></p>
<p><i>How much data should be collected for the abattoir animal health data collection and feedback systems to be relevant?</i></p>	<p><i>Species-specific standards</i></p>	<p><i>A Standard was developed to specify the level of data required to be collected.</i></p>
<p><i>Is the same amount of data needed for cattle, goats, pigs and sheep and different supply chains?</i></p>		<p><i>The Standard has been developed to be species specific to ensure its appropriate use by all processing plants.</i></p>

Evaluation Questions	What aspects of the project will be measured and tested?	Assessment of the Project
<p><b>Impact</b>  <i>What has changed or is different because of this project?</i></p>	<p><i>Percentage of processing plants that have implemented animal health data capture and feedback systems.</i></p>	<p><i>High volumes of data are being captured through the pilots trials conducted and the adoption of the project be additional processing plants.</i></p>
<p><i>What is the outcome of the project activities?</i></p>	<p><i>Percentage of processing plants that are interested in implementing animal health data capture and feedback systems.</i></p>	<p><i>Additional processing have adopted or are in the process of adopting the standard and project objective. In the beef sector alone the adoption rates by volume of head processed would exceed approximately 45% already.</i></p>
<p><i>Have animal health abattoir data collection and feedback systems been demonstrated to reduce the prevalence of disease in animals presented for slaughter?</i></p>	<p><i>Positive business cases developed and demonstrated.</i></p>	<p><i>Due to the complexity of the project being greater than expected this extension and realisation of the full benefits including the reduction in animal disease are yet to be demonstrated. For example it was estimated by Frontier Economics that it takes around 5 years in beef cattle to demonstrate that change has occurred and from a producers perspective it has been estimated that it takes around 15 years for adoption to occur.</i></p>



Evaluation Questions	What aspects of the project will be measured and tested?	Assessment of the Project
<p><b><u>Appropriateness</u></b>  <i>To what extent have the business case and pilot studies contributed useful information to address the objective of industry-wide implementation of abattoir animal health data collection and feedback systems?</i></p>	<p><i>Benefits provided to stakeholders by the business case and pilot study activities</i></p>	<p><i>The pilot trials were very successful, and the cost benefit analysis has demonstrated significant financial benefit to the industry.</i></p>
<p><i>To what extent did the project activities and the way they were undertaken align with stakeholder needs and expectations?</i></p>		<p><i>The pilot trials including producer feedback have been very successful and met stakeholder expectation.</i></p>
<p><i>Which innovation practices or technology employed did not contribute to / deliver on outcomes? And why?</i></p>		<p><i>The online collaborative workshop/consultation ‘the jam’ did not deliver the expected level of participation and as such additional traditional methods of interviews and surveys were completed.</i></p>
<p><i>Have abattoir animal health data collection system been developed that costs less to implement and run than the potential returns?</i></p>	<p><i>Pilot studies</i></p>	<p><i>The cost benefit analysis work completed from the data captured during the pilot trials shows that there are significant benefits to the supply chain. It has not yet been established where the benefits in the individual segments of the supply chain are cost effective for implementation and adoption given the reliance required on other areas of the supply chain to realise the benefits.</i></p>
<p><b><u>Efficiency</u></b>  <i>To what extent did project / program attain the highest value from available resources?</i></p>	<p><i>Suitable personnel engaged  Pilot studies of abattoir data collection and feedback</i></p>	<p><i>Cost register of all expenditure incurred was assessed by the Steering Committee throughout the project considering– time involved, timeliness of decision making, attendance and costs.</i></p>

Evaluation Questions	What aspects of the project will be measured and tested?	Assessment of the Project
<i>How could the same outcomes be achieved more simply and for less cost in future projects?</i>	<i>systems according to the project plan Expenditure for different activities commensurate to the impact</i>	<i>Consideration could be given to a more supply chain driven approach with great funds allocated to extension and adoption.</i>
<i>Did the project achieve the desired results within the budget?</i>		<i>The expected deliverables of the project have been achieved and within the budget. The project area is more complex than expected and although great progress has been made through work in the area would be desirable.</i>
<i>Can a system be developed that costs less to implement and run than the potential returns?</i>	<i>Pilot studies and Cost Benefit Analysis</i>	<i>The cost benefit analysis work completed from the data captured during the pilot trials shows that there are significant benefits to the supply chain. It has not yet been established where the benefits in the individual segments of the supply chain are cost effective for implementation and adoption given the reliance required on other areas of the supply chain to realise the benefits.</i>
<p><b>Legacy</b> <i>How will the project / program continue to have an impact after its completion?</i></p>	<i>Adoption of abattoir animal health data collection and feedback systems after the project has finished</i>	<p><i>AMPC/ APL/ MLA Updated fact sheets and project reports are available on the stakeholder websites.</i></p> <p><i>The animal health data capture (company slaughter floor software) and data feedback system managed by MLA (LDL) is being advertised through existing industry communications platforms i.e. partner websites, AMPC/ MINTRAC network meeting and conferences. In addition to this companies are also using their own existing data capture and feedback systems.</i></p>

<b>Evaluation Questions</b>	<b>What aspects of the project will be measured and tested?</b>	<b>Assessment of the Project</b>
<i>Who will ensure this?</i>		<i>The RDCs involved in the project are committed to the feedback of data to producers.</i>

**Table 2: Assessment of the Project success in meeting the project key performance indicators**

KPI no.	KPI description	Outputs linkage		Quantitative assessment	Qualitative assessment of the outcome and achievements against the KPI	Supporting documentation
1.1	Confirm the engagement of a project manager	1(a)	Engagement of a project manager for the duration of the Project.	<input checked="" type="checkbox"/> Achieved <input type="checkbox"/> Partially achieved <input type="checkbox"/> Not achieved	Dr Joan Lloyd was engaged as project manager until 2018. The secretariat services were then provided by APL at cost and sub-project management was contracted to individuals and/or companies on as needed basis.	Sub-project 2016/2225 - Project Manager Role for RR&D4P 'Enhancing supply chain profitability through reporting and utilization of peri-mortem information by livestock producers' (H4W)
1.2	Provide the agreed membership, governance arrangements and terms of reference for the project steering committee	1(b)	Establishment of a project steering committee responsible for the oversight of Project. The project steering committee will agree it's terms of reference which will set out its membership, governance arrangements and responsibilities.	<input checked="" type="checkbox"/> Achieved <input type="checkbox"/> Partially achieved <input type="checkbox"/> Not achieved	The terms of reference for the project steering committee were developed and agreed in the third meeting of the project steering committee on 5 December 2016.	Project Steering Committee Terms of Reference – Appendix 1
1.3	Provide a list of all partner organisations and the status of	1(c)	Executed agreements with partner organisations.	<input checked="" type="checkbox"/> Achieved <input type="checkbox"/> Partially achieved	Details of partner organisations and associated agreements	

KPI no.	KPI description	Outputs linkage		Quantitative assessment	Qualitative assessment of the outcome and achievements against the KPI	Supporting documentation
	partner agreements, including the date, or expected date, of each agreement			<input type="checkbox"/> Not achieved	were provided in Milestone 1. The partner organisations and contracted consultants are provided in full in Section 4 – Collaboration of the Final Report.	
1.4	Provide a list of cash and in-kind contributions for each partner, for each financial year of the Activity and the total amount of funding and in-kind contributions	1(d)	Establishment of the yearly breakdown of cash and in-kind contributions to be provided by partner organisations for the duration of the activity.	<input checked="" type="checkbox"/> Achieved <input type="checkbox"/> Partially achieved <input type="checkbox"/> Not achieved	The cash and in-kind contributions for each partner, for each financial year of the project and the total amount of funding and in-kind contributions was submitted in the Operations Plan attached to the Milestone 1 report.	Operations Plan - Appendix 2
1.5	Provide a draft project plan	2(a)	A project plan that sets out the schedule for activities, and the human resources and financial resources required. As part of this, a risk management plan will be prepared.	<input checked="" type="checkbox"/> Achieved <input type="checkbox"/> Partially achieved <input type="checkbox"/> Not achieved	The Operations Plan for the project was submitted with the Milestone 1 report.	Operations Plan - Appendix 2
2.1	Provide the project plan endorsed by the	2(a)	A project plan that sets out the schedule for activities,	<input checked="" type="checkbox"/> Achieved	The Operations Plan was endorsed by the project	Operations Plan - Appendix 2

KPI no.	KPI description	Outputs linkage		Quantitative assessment	Qualitative assessment of the outcome and achievements against the KPI	Supporting documentation
	project steering committee		and the human resources and financial resources required. As part of this, a risk management plan will be prepared.	<input type="checkbox"/> Partially achieved <input type="checkbox"/> Not achieved	steering committee prior to the submission with the Milestone 1 report, in the third meeting of the project steering committee on 5 December 2016.	
2.2	Provide the communication and extension plan	2(b)	A communication and extension plan that sets out the schedule for communication and extension activities, and the human resources and financial resources required.	<input checked="" type="checkbox"/> Achieved <input type="checkbox"/> Partially achieved <input type="checkbox"/> Not achieved	The Communication Plan for the project was submitted with the Milestone 2 report.	Communication Plan - Appendix 3
2.3	Provide the monitoring and evaluation plan	2(c)	A monitoring and evaluation plan that sets out the timeframes for activities to be delivered, and the human resources and financial resources required.	<input checked="" type="checkbox"/> Achieved <input type="checkbox"/> Partially achieved <input type="checkbox"/> Not achieved	The Monitoring and Evaluation Plan for the project was submitted with the Milestone 2 report.	Monitor and Evaluation Plan – Appendix 4
2.4	Update the Commonwealth on consultation with veterinarians	3(a)	Consultation with production veterinarians on animal health conditions and associated pathology for capture and reporting across	<input checked="" type="checkbox"/> Achieved <input type="checkbox"/> Partially achieved <input type="checkbox"/> Not achieved	Veterinarians were consulted with throughout the project especially in the initial project consultation phase sub-project	2016/2238 - Design and provision of an online collaboration event ('jam') to support engagement and idea generation for the

KPI no.	KPI description	Outputs linkage		Quantitative assessment	Qualitative assessment of the outcome and achievements against the KPI	Supporting documentation
			pork, beef and sheepmeat, and any other relevant issues.		2016/2238, the development of the standards, sub-project 2017/004 and the development of training sub-project 2017/2235. This was reported to the commonwealth through the Milestone 2 report.	development of standards for the consistent reporting, recording and analysis of peri-mortem disease information across pork, beef and sheep production systems ('improved Animal Health Feedback Systems') (H4W) 2017/004 - Development of standards for ante/post-mortem processor data collection and reporting for the pork industry (H4W) 2017/2235 - Development and implementation of an accredited training program in animal health data collection (H4W)
2.5	Update the Commonwealth on communication and extension activities	3(f)	Implementation of a communication and extension plan, and promotion of project activities and outcomes. Avenues for extension may	<input checked="" type="checkbox"/> Achieved <input type="checkbox"/> Partially achieved <input type="checkbox"/> Not achieved	The Communication Plan for the project was submitted with the Milestone 2 report. The Communication Plan was updated throughout the	Communication Plan - Appendix 3 2017/2227 - Communications Strategy for the Health 4 Wealth Project for RR&D4P

KPI no.	KPI description	Outputs linkage		Quantitative assessment	Qualitative assessment of the outcome and achievements against the KPI	Supporting documentation
			include research and development corporations (RDC) websites and publications, emails and updates to producers, processors and veterinarians, industry meetings and field days.		project including through sub-project 2017/2227.	'Enhancing supply chain profitability through reporting and utilization of peri-mortem information by livestock producers' (H4W)
2.6	Report on the development of species-specific standards for ante- and post-mortem data	5(a)	Species-specific standards for ante- and post-mortem processor data collection and reporting of the causes and incidence of carcase and offal condemnations, with associated pathology.	<input checked="" type="checkbox"/> Achieved <input type="checkbox"/> Partially achieved <input type="checkbox"/> Not achieved	Disease conditions and standards for beef, sheep, goats and pigs were agreed through extensive consultation. Sub-project 2017/004	<p>A copy of the Standards are provided in Appendix 5, 5a and 6.</p> <p>2017/004 - Development of standards for ante/post-mortem processor data collection and reporting for the pork industry (H4W)</p>
2.7	Report on the development of competency standards for data collection	5(b)	Competency standards for data collection across processing establishments	<input checked="" type="checkbox"/> Achieved <input type="checkbox"/> Partially achieved <input type="checkbox"/> Not achieved	The National Meat Industry Training Advisory Council developed and implemented an accredited training program in animal health data collection. This was developed as a new unit of competency for inclusion in the AMP	<p>AMPA414 Manage the collection, monitoring and reporting of animal health data from a meat processing plant – Appendix 7 and 7a</p> <p>2017/2235 - Development and implementation of an accredited training program</p>



KPI no.	KPI description	Outputs linkage		Quantitative assessment	Qualitative assessment of the outcome and achievements against the KPI	Supporting documentation
					Australian Meat Industry Training Package, AMPA414 Manage the collection, monitoring and reporting of animal health data from a meat processing plant.	in animal health data collection (H4W)
2.8	Report on the development of business rules	5(c)	Business rules that are available to stakeholders, including regulatory agencies, producers and veterinarians. The business rules will outline at minimum the details of data ownership and the type and extent of condemnation information collected that may be provided to stakeholders including, but not limited to, regulatory authorities, producers, processors and veterinarians.	<input type="checkbox"/> Achieved <input checked="" type="checkbox"/> Partially achieved <input type="checkbox"/> Not achieved	Processors who use the MLA - LDL feedback system have a data licence in place which cover data sharing and how the data is use.	2018/0064 - Health 4 Wealth (H4W): Red meat pilot trials
2.9	Advise the Commonwealth of the outcome of the project steering	5(d)	Draft species-specific standards tested and validated through the supply chains.	<input checked="" type="checkbox"/> Achieved	The steering committee were happy with the progress on Activity 5 and	2017/004 - Development of standards for ante/post-mortem processor data

KPI no.	KPI description	Outputs linkage		Quantitative assessment	Qualitative assessment of the outcome and achievements against the KPI	Supporting documentation
	committee review of Activity 5 and the recommended next steps		The project steering committee will review the results of outputs 5(a) to 5(c) and decide next steps.	<input type="checkbox"/> Partially achieved <input type="checkbox"/> Not achieved	<p>this was reported in the Milestone 2 report.</p> <p>Disease conditions and standards for beef, sheep, goats and pigs were agreed through extensive consultation. Sub-project 2017/004. The <i>Australian National Standard for the Development, Collection and Reporting of Animal Health Disease and Defect Data through the Supply Chain</i> was validated through the pilot trials and amendments based on the trial are currently being considered by the Working Group reviewing the Standard.</p>	collection and reporting for the pork industry (H4W)
3.1	Report on communication and extension activities to date	3(f)	Improved awareness and engagement with the processing sector, producers and government.	<input checked="" type="checkbox"/> Achieved <input type="checkbox"/> Partially achieved	Through the project (and sub-projects) extensive communication and extension activities occurred as detailed in	

KPI no.	KPI description	Outputs linkage		Quantitative assessment	Qualitative assessment of the outcome and achievements against the KPI	Supporting documentation
			<p>Provide insights and learnings on what other countries are doing in animal health and disease feedback to producers.</p> <p>Implementation of a communication and extension plan, and promotion of project activities and outcomes. Avenues for extension may include research and development corporations (RDC) websites and publications, emails and updates to producers, processors and veterinarians, industry meetings and field days.</p>	<input type="checkbox"/> Not achieved	<p>Section 5 Extension and Adoption Activities of the final report. Industry workshops, webinars, online collaborations, interviews, surveys, face-to-face meetings and video calls were held to throughout the project and sub-projects to ensure continual communication with stakeholders.</p>	
3.2	Report on the development of systems that can collate data from the multiple data	6(a)	Flexible delivery options will be critical to all stakeholders.	<input type="checkbox"/> Achieved <input checked="" type="checkbox"/> Partially achieved	Generally, it was understood that many establishments have systems in place for the collection and reporting of	2018/0034 - Health4Wealth - pilot trials for the pork industry (H4W)

KPI no.	KPI description	Outputs linkage		Quantitative assessment	Qualitative assessment of the outcome and achievements against the KPI	Supporting documentation
	collection systems being used across pork, beef and sheep processing plants		An information platform capable of collating and validating data from multiple sources.	<input type="checkbox"/> Not achieved	<p>data as such the focus was place on the language and standards and how they could be incorporated into an establishments existing system while ensuring consistency in collection and reporting.</p> <p>From a beef and sheep perspective it was identified that LDL could be used for producer feedback (where companies do not already have their own feedback systems) and for industry benchmarking.</p> <p>The validation trials for pork included the development of hardware and software to collect data centrally. This may be particularly useful in smaller domestic plants with limited funds for IT and hardware</p>	2018/0064 - Health 4 Wealth (H4W): Red meat pilot trials

KPI no.	KPI description	Outputs linkage		Quantitative assessment	Qualitative assessment of the outcome and achievements against the KPI	Supporting documentation
					development (across all species).	
3.3	Report on the development of the frameworks, definition and module for commercial software providers for all species	7(a)	<p>Ability to test and validate the framework and definitions</p> <p>Frameworks, definitions and modules for in-plant data collection that have been provided to commercial software providers for integration into existing systems.</p>	<input type="checkbox"/> Achieved <input checked="" type="checkbox"/> Partially achieved <input type="checkbox"/> Not achieved	<p>The proposed pork study included a module developed by an IT provider.</p> <p>With the standard that has been developed software providers are able to insert the revised standards into their software packages and make these standards available to their customers at little or no cost. This was achieved in the red meat pilot trials. However, it was limited to software vendors that the pilot processors used.</p>	<p>2018/0034 - Health4Wealth - pilot trials for the pork industry (H4W)</p> <p>2018/0064 - Health 4 Wealth (H4W): Red meat pilot trials</p>
4.1	Evaluate and report on the progress of the project (Output 2(d), including revised milestone schedule for the	2(d)	An evaluation and report on progress at the mid-point of the Project.	<input checked="" type="checkbox"/> Achieved <input type="checkbox"/> Partially achieved <input type="checkbox"/> Not achieved	Completed in the Milestone 4 report	

KPI no.	KPI description	Outputs linkage		Quantitative assessment	Qualitative assessment of the outcome and achievements against the KPI	Supporting documentation
	remainder of the project).					
4.2	Update on stakeholder awareness workshops	3(b)	Information sessions and/or workshop in person or online, with producers in association with processing establishment involved in field pilot studies. As a minimum, sessions should cover how to use feedback from processors, strategies to address feedback received and benchmarking for monitoring and improved production.	<input checked="" type="checkbox"/> Achieved <input type="checkbox"/> Partially achieved <input type="checkbox"/> Not achieved	Through the project (and sub-projects) extensive communication and extension activities occurred as detailed in Section 5 Extension and Adoption Activities of the final report. Industry workshops, webinars, online collaborations, interviews, surveys, face-to-face meetings and video calls were held to throughout the project and sub-projects to ensure continual communication with stakeholders.	
4.3	Report on the development of reporting interfaces	7(b)	Software that is transferable and compatible with different industry data collections systems currently being used by processors to support consistent collection	<input checked="" type="checkbox"/> Achieved <input type="checkbox"/> Partially achieved	Generally, it was understood that many establishments have systems in place for the collection and reporting of data as such the focus was	2018/0034 - Health4Wealth - pilot trials for the pork industry (H4W) 2018/0064 - Health 4 Wealth (H4W): Red meat pilot trials

KPI no.	KPI description	Outputs linkage		Quantitative assessment	Qualitative assessment of the outcome and achievements against the KPI	Supporting documentation
			and reporting of carcase and offal condemnation. The software should correlate disease and parasite conditions with meat yield and offal recoveries in terms of both quantity and quality and provide quantitative data to support ongoing risk assessment of inspection procedures for gross pathology of animal conditions.	<input type="checkbox"/> Not achieved	place on the language and standards and how they could be incorporated into an establishments existing system while ensuring consistency in collection and reporting.  From a beef and sheep perspective it was identified that LDL could be used for producer feedback (where companies do not already have their own feedback systems) and for industry benchmarking. Updates were provided in the Milestone 4 report.	
5.1	Conduct and report on outcomes of the validation studies for each species	8(a)	Nine-month pilot studies in pork, sheepmeat and beef processing establishments to capture and collect peri-mortem data during processing and provide feedback to producers	<input checked="" type="checkbox"/> Achieved <input type="checkbox"/> Partially achieved <input type="checkbox"/> Not achieved	Pilot Trials occurred with SARDI managing the pork trials in two abattoirs and MLA managing the red meat trials in eight abattoirs.  The willingness by abattoirs to participate in the Pilot	2018/0034 - Health4Wealth - pilot trials for the pork industry (H4W)  2018/0064 - Health 4 Wealth (H4W): Red meat pilot trials

KPI no.	KPI description	Outputs linkage		Quantitative assessment	Qualitative assessment of the outcome and achievements against the KPI	Supporting documentation
			through the tools developed under Activity 6.		Trials was exceptional and allowed a wide-ranging systems to be evaluated. Pilot Trials allowed assessment and improvement of the agreed conditions, recording systems, inspection services, reporting and feedback systems, and identified opportunities for improvement in all areas.	
5.2	Advise the Commonwealth of the outcome of the review and incorporated enhancements	8(b)	A review of the pilot trial outcomes after systems have been operating for a minimum of three months, including incorporation of necessary changes.	<input checked="" type="checkbox"/> Achieved <input type="checkbox"/> Partially achieved <input type="checkbox"/> Not achieved	The steering committee discussed potential project activities for the successful completion of the project. In the pork pilot trials at the time, two plants were involved in data collection and the sub-project team were hoping to start work with other processors soon. Eight red meat processing plants were involved in the red meat pilot trials. The	2018/0034 - Health4Wealth - pilot trials for the pork industry (H4W) 2018/0064 - Health 4 Wealth (H4W): Red meat pilot trials



KPI no.	KPI description	Outputs linkage		Quantitative assessment	Qualitative assessment of the outcome and achievements against the KPI	Supporting documentation
					<p>next step was the release of feedback to primary producers.</p> <p>These updates were reported in the Milestone 5 report.</p>	
6.1	Advise the Commonwealth of the outcome of the project steering committee review of Activity 8 and next steps	8(c)	Identification of the challenges or barriers to implementation of the data capture collection system and recommendation of solutions for each model before the rollout of a national uniform feedback system.	<input checked="" type="checkbox"/> Achieved <input type="checkbox"/> Partially Achieved <input type="checkbox"/> Not achieved	<p>As the pork and red meat trials were still underway, this KPI is only partially achieved during Milestone 6. However, challenges and barriers were identified throughout the pilot trials and reported on to the Steering Committee and the Commonwealth in subsequent Milestone reports. These issues included changes to the Innova software for the Marel system for the pork trials.</p>	<p>2018/0034 - Health4Wealth - pilot trials for the pork industry (H4W)</p> <p>2018/0064 - Health 4 Wealth (H4W): Red meat pilot trials</p>

KPI no.	KPI description	Outputs linkage		Quantitative assessment	Qualitative assessment of the outcome and achievements against the KPI	Supporting documentation
7.1	Provide the final evaluation of the Project	2(c)	A monitoring and evaluation plan that sets out the timeframes for activities to be delivered, and the human resources and financial resources required.	<input checked="" type="checkbox"/> Achieved <input type="checkbox"/> Partially achieved <input type="checkbox"/> Not achieved	This report and the final report	
7.2	Conduct and report on sessions or workshops held with producers	3(b)	Information sessions and/or workshop in person or online, with producers in association with processing establishment involved in field pilot studies. As a minimum, sessions should cover how to use feedback from processors, strategies to address feedback received and benchmarking for monitoring and improved production.	<input type="checkbox"/> Achieved <input checked="" type="checkbox"/> Partially Achieved <input type="checkbox"/> Not achieved	Several producer workshops were conducted by MLA with red meat producers. These workshops focused on providing awareness of the NSHMP, the Health 4 Wealth program and the data that was becoming available through the H4W initiative. Three beef plants that launched animal disease and condition reporting via LDL ran producer webinars or producer days to introduce their suppliers to the animal disease feedback. These webinars or workshops	2018/0034 - Health4Wealth - pilot trials for the pork industry (H4W) 2018/0064 - Health 4 Wealth (H4W): Red meat pilot trials

KPI no.	KPI description	Outputs linkage		Quantitative assessment	Qualitative assessment of the outcome and achievements against the KPI	Supporting documentation
					<p>provided producers with information on the processor's business especially around livestock and the current market; H4W pilot trials; LDL, and on-farm production impacts due to disease condition. Agriculture Victoria and Local Land Services District Veterinarians undertook the on-farm production impacts session to highlight to producers the symptoms of the five top conditions; their impacts on productivity and the cost associated with this; and how and why the LDL feedback will benefit producers in managing these diseases.</p> <p>Pork Pilot Trial: The CoVID-19 pandemic led to the cancellation of</p>	

KPI no.	KPI description	Outputs linkage		Quantitative assessment	Qualitative assessment of the outcome and achievements against the KPI	Supporting documentation
					<p>planned producer meetings due to widespread border closures and a reluctance (refusal) to allow non-essential visitors access to piggeries and abattoirs. These restrictions necessitated a review of project methodology. Individual online presentations on H4W were delivered to different stakeholders' who represented more than 50% of pig production in Australia. Further online presentations on H4W have been made to consultant pig veterinarians and their producer clients (presenting the producers individual farm data).</p>	
7.3	Demonstrate and promote the system to processors	3(c)	Demonstration and promotion of the system to processing establishments.	<input type="checkbox"/> Achieved <input checked="" type="checkbox"/> Partially achieved	Demonstration of the system occurred through the pilot trials. Red meat	2018/0034 - Health4Wealth - pilot trials for the pork industry (H4W)

KPI no.	KPI description	Outputs linkage		Quantitative assessment	Qualitative assessment of the outcome and achievements against the KPI	Supporting documentation
				<input type="checkbox"/> Not achieved	<p>trials were conducted at eight red meat abattoirs including beef, sheep, and goat processing companies. Pork pilot trials were completed at two abattoirs.</p> <p>Unfortunately, due to COVID restrictions demonstrate of this project one site was not available however the results of the work have been published. In addition, adoption projects for the collection and reporting of animal health disease and defect data are continuing to be funded by MLA.</p>	2018/0064 - Health 4 Wealth (H4W): Red meat pilot trials
7.4	Conduct and report on inspection extension programme	3(d)	Information and extension activity with inspection and veterinary public health experts, to provide operational and quality assurance managers with the	<input checked="" type="checkbox"/> Achieved <input type="checkbox"/> Partially achieved <input type="checkbox"/> Not achieved	The Health 4 Wealth project and the red meat pilot trials requires the meat inspection team at participating abattoirs to take on a new role in	2018/0034 - Health4Wealth - pilot trials for the pork industry (H4W) 2018/0064 - Health 4 Wealth (H4W): Red meat pilot trials

KPI no.	KPI description	Outputs linkage		Quantitative assessment	Qualitative assessment of the outcome and achievements against the KPI	Supporting documentation
			information and training required to support the system.		<p>identification and recording of animal disease and defect data.</p> <p>As part of the red meat pilot trials, MLA worked with plants that used different meat inspection services, including Government Inspectors, company-employed Inspectors and Inspectors provided by third-party companies.</p> <p>Plants that included their meat inspection team early in the project at the design phase were more successful in getting buy in to the project. The plants that did not do this found it challenging to engage the meat inspection team.</p> <p>Some plants found the most difficult part of the project was attempting to engage</p>	

KPI no.	KPI description	Outputs linkage		Quantitative assessment	Qualitative assessment of the outcome and achievements against the KPI	Supporting documentation
					DAWR inspectors, possibly because they did not engage their meat inspection team in the design phase of the project.	
7.5	Implement national animal health and disease extension and adoption strategy			<input type="checkbox"/> Achieved <input checked="" type="checkbox"/> Partially Achieved <input type="checkbox"/> Not achieved	Sub-project 2021/003 - Animal health and disease extension and adoption strategy has developed a National Animal Health and disease extension and adoption strategy to be implemented by the RDCs	2021/003 - Animal health and disease extension and adoption strategy
7.6	Publish research findings	3(g)	Published research findings. Publications must include instructional information for producers using the system and case study fact sheets. If appropriate, publication may include conference papers and journal articles.	<input checked="" type="checkbox"/> Achieved <input type="checkbox"/> Partially achieved <input type="checkbox"/> Not achieved	The publications from the project are the sub-project reports these are available on the APL website.	
7.7	Provide a list of publications, including	3(g)	Published research findings. Publications must include instructional information for	<input checked="" type="checkbox"/> Achieved <input type="checkbox"/> Partially achieved	The publications from the project are the sub-project	Factsheets for beef and pork conditions detected in

KPI no.	KPI description	Outputs linkage		Quantitative assessment	Qualitative assessment of the outcome and achievements against the KPI	Supporting documentation
	publications that are still in preparation or submitted		producers using the system and case study fact sheets. If appropriate, publication may include conference papers and journal articles.	<input type="checkbox"/> Not achieved	reports these are available on the APL website. In addition, Factsheets for beef and pork conditions detected in abattoir monitoring were developed under sub-project 2018/0085. Completed factsheets were submitted to the department with the Milestone 7 report.	abattoir monitoring Appendix 8  2018/0085 - Development of Factsheets for beef and pork conditions detected in abattoir monitoring - H4W



**Table 3: Lessons learnt**

Number	Issue Name	Problem/Success	Impact	Recommendation
<i>Overall project</i>				
1	Expert Panel	An expert panel was formed at the beginning of the project to support the project management team. This panel was very beneficial in reviewing and making recommendations of the technical aspects of the project.	Contributed to the success of the project	Consideration to be given to forming an expert panel for future projects of this nature.
2	Industry Consultation	Industry consultation has been very productive throughout the project. It has allowed the project (and sub-project) teams to ensure that practical, real work considerations have been included in the design and implementation of the project to ensure its successful extension and adoption.	Contributed to the success of the project	Industry consultation and engagement is paramount to success in all rural research and development projects.
3	Project management	With such as complex project that crosses 4 livestock species and the entire supply chain and a number of auxiliary services, a project manager is key to the sub-project approach to ensure that there was continual traction gained on the project and to allow for linkage and cross collaboration and learning between the sub-projects being undertaken.	To ensure maximum efficiencies and benefits were gained through the project.	That a project manager be engaged for the duration of similar projects.

Number	Issue Name	Problem/Success	Impact	Recommendation
4	Single IT solution	Any expectation of developing a single system to be used by every abattoir across all species is unrealistic. Individual organizations have the right to use, install, develop and manage any system they choose.	By mandating a single system, innovation and advancement in the area is hampered. Adoption can also be reduced or not occur at all because of this.	The project is to develop the common language and to identify systems that are / could be used for collection and distribution of that data using the common language. The Trials must facilitate and evaluate common systems in use as well as identify opportunities for improvement.
<i>2016/2202 - Enhancing supply chain efficiency through the utilization of peri-mortem information for major meat production species – business case development (H4W)</i>				
5	Value realisation	Without systematically ensuring key system components are implemented (i.e., inspection accuracy, information suitability, data capture, data analysis, information transfer, adoption) value realisation is greatly diminished.	The expected value of \$83,222,1766 will not be realised.	That the industry systematically work through the components of the project to ensure full value realisation.
<i>2016/2238 - Design and provision of an online collaboration event ('jam') to support engagement and idea generation for the development of standards for the consistent reporting, recording and analysis of peri-mortem disease information across pork, beef and sheep production systems ('improved Animal Health Feedback Systems') (H4W)</i>				
6	Technological engagement uptake by the industry	Although 34 participants took part in the 'jam' session and beneficial discussions and ideas were raised in regard to the H4W project at a 21%	Engagement is key to the success of project adoption.	Further engagement by more traditional and known methods is recommended than was

Number	Issue Name	Problem/Success	Impact	Recommendation
		participation rate compared to the expect 65% participation rate, this form of technological engagement was not embraced by the livestock and meat industry.		completed through sub-project 2017/2205.
<i>2017/004 - Development of standards for ante/post-mortem processor data collection and reporting for the pork industry (H4W)</i>				
7	Consistent training of meat inspectors	To ensure consistent data is provided to producers, meat inspectors collecting the data must be provided with consistent training.	Consistent training will result in consistent and reliable data means that the producers can trust the data provided.	Meat inspection training in the collection of the data is run with refresher courses. New and existing meat inspectors should be consistently trained. A manual for inspectors is required to improve consistency in evaluations across inspectors and inspection systems.
8	Standardisation of language	To allow consistent data to be collected, reported, transfers and provided back to producers a standardised and codified language is required.	This is the foundation of the project with all other components of the project being reliant on it.	Work should continue on the national standard to ensure it is maintained up to date, and is practically applicable to stakeholders.
9	Keep the collection system simple	To ensure ease of collection, consistency of collection and integration with existing processing	Over complication of the front of the system when staff are already time poor will mean that data is not accurately and	The system for collection should be simple to integrate into the processing plants

Number	Issue Name	Problem/Success	Impact	Recommendation
		data, the collection system should be kept as simple as possible.	consistently recorded. Complication in the system that results in the system not allowing for integration will impact the data analysis and potential value gained from the project.	existing system. The front facing collection aspect of the system should also be simple.
10	Domestic processing adoption	There are approximately 80 export registered processing plants across Australia. In addition to this there are 90 processing plants purely producing for the domestic market. Although these figures do not represent volume, primary producers send their livestock to both and as such it is important that extension and adoption activities are also conducted with domestic processing plants.	To ensure that consistent feedback of data to primary producers to allow them to trust data and ensure that they act on the data it is key that data is continually provided to them no matter which processing plant they send livestock to.	That extension and adoption work is undertaken with the domestic processing plants too.
11	Adoption through individual supply chains	The volume of primary producers in Australia is very high, to ensure engagement with them is maximised, and to ensure champions of the change are identified adoption through individual supply chains should be the initial focus of any extension and adoption activities.	The livestock industry and primary producers are known to be slow adopters; initially focusing on individual supply chains will improve and expediate extension and adoption rates.	Initial extension and adoption rates should be focused on individual supply chains.

Number	Issue Name	Problem/Success	Impact	Recommendation
12	Deidentified aggregated data would be of value for industry	The animal health disease and defect data has great potential in adding value to the industry. It has the potential to support market access claims, trade negotiations, regulatory change and animal health policy, as well allow for targeted research and extension activities.	Without clear business rules to protect identities and supply chain commercial confidentiality the processing industry will not be willing to share data.	Business rules are required to be developed about the transfer and use of data to ensure data can be used in a deidentified to benefit industry.
<i>2017/2205 - Collection, utilisation and sharing of post-mortem animal health data in the red meat supply chain (H4W)</i>				
13	Limiting the collection of data	There was a general view that the “list” needs to be limited to those diseases/conditions that producers can act upon and achieve some reduction in the incidence of the disease. It was also recommended that only diseases/conditions that do not require routine laboratory testing for confirmation be included. In addition, some plants believe the list should be limited to a few of the most significant diseases (5-8) to make it easier to have on a touch screen or record on paper. Having said that there are 20 conditions in the NSHMP recording sheets and companies and inspectors seem to have coped.	The view is aimed at providing targeted information to producers and ease of collection for meat inspectors, however this does not provide the processors with the understanding of value that can be realised and could therefore result in lack of adoption.	If data attributes are to be limited in feedback then this should made clear to producers to prevent disillusionment when the goal posts potentially keeps moving.
14	Practicality of collection (technology verses paper	The practicalities of animal health data collection in plants may	The ability to collect animal health disease and defect data	Chain speed and inspector resourcing

Number	Issue Name	Problem/Success	Impact	Recommendation
	records, chain speed, additional inspector)	necessitate the use of different technologies and protocols depending on the species, chain speed and inspection arrangements.		should be considered in data collection and the method of collection. A time in motion and workspace assessment should be conducted to understand resourcing needed and the type of collection method to be used.
15	Inspection model used	Government meat inspectors are reluctant to collect animal health disease and defect data. Third party and company inspectors are more likely to collect data.	Reliable data collection, and therefore usable data for analysis and feedback.	Strong engagement with meat inspectors is required in general to ensure that they understand the importance of data collection. The DAWR (and meat inspection providers) need to be consulted and engaged with at a higher management level, to ensure reliable data collection address willingness and due to turn over of staff, leave etc.
16	Reporting format – regional connectivity	Consideration should be given to the reporting format, a web-based	Adoption levels are not as high as expected and the full	Traditional paper-based methods of extension

Number	Issue Name	Problem/Success	Impact	Recommendation
		service with login provides the advantage of allowing for linkage to extension material and resources however regional lack of reliable connectivity needs to be considered.	benefits of the project are not realised.	and reporting need to be available for some regions.
17	Data sharing	Animal health data should be available to producers (their livestock data) and processors (stock they processed.) The majority of plants are in favour of this data being stored in both a national and company data bases with eighty percent in favour of there being a national data base. Industry is less enthusiastic about other parties sharing this data but more relaxed if the data is aggregated and individual producers cannot be identified.	Data sharing allows for great value and benefits being realised out of the project.	Business rules for data sharing is required and a national database for data sharing, analysis and benchmarking should be established.
<i>2017/2235 - Development and implementation of an accredited training program in animal health data collection (H4W)</i>				
18	Accuracy of data collection	Accuracy of data collection is important to ensure producer confidence in the data reported.	Confidence in the data reported is paramount to the producers acting on the animal health disease and defect data to ensure that the value and benefits of the project are realised.	Meat inspection training in the collection of the data is run with refresher courses. New and existing meat inspectors should be consistently trained. Verification of data collection through physical and data

Number	Issue Name	Problem/Success	Impact	Recommendation
				analysis is also important to ensure accuracy of data collection.
19	Engagement of processing staff	Data collection occurs in the processing environment where many cogs turn to ensure efficiency of processing and hopefully a profit. Changing functions or add additional tasks can throw off the balance that provides the efficiency and profit to a business.	Misunderstanding and negative view of the data collection function. Data not being collected accurately or consistently.	Engagement should occur with the processing management staff of the slaughter floor, livestock team and plant in general to ensure understanding of the benefits and value of the project to the company.
20	Integration of the data collection and reporting systems.	To ensure accurate and timely reporting and meaningful reporting the data collection and reporting systems need to be integrated. Feedback reports need to be linked to the animal identification and it other attributes such as weight, supply chain, etc.	To allow for meaningful analysis and meaningful reporting that can be acted to ensure that the value of the project can be realised.	Data collection and reporting systems should be integrated.
<i>2017/2262 - Assessment of value from reporting findings from analysis of sheep health data collected at abattoirs to the sheep supply chain (H4W)</i>				
21	Multivariate statistical analysis is not beneficial to verify a business case when the foundational components of a system are	Statistical analysis on data that is not verified can provide false or misleading outcomes, if outcomes can be established. In the case of this project the data that is already exists has to be fully	Misleading outcomes can lead to poor adoption.	Careful consideration of data analysis conducted and shared should occur.



Number	Issue Name	Problem/Success	Impact	Recommendation
	not in place, despite data being available.	understood to be accurately analysed.		
<i>2018/0034 - Health4Wealth - pilot trials for the pork industry (H4W)</i>				
22	Avenues for adoption and extension	Due to the COVID pandemic traditional avenues of extension (such as face-to-face meeting and producer days and workshops) need to be reconsidered.	Level of adoption of the project will be reduced and therefore the full value of the project will not be realised.	Even post COVID all available avenues for adoption and extension need to be considered to ensure the greatest adoption of the project as possible.
23	Retail supply chains must be considered	Given that the retailers in Australia are large owners of livestock across Australia any National system must include their supply chains.	This has a potential to reduce the level of action on the data collected with the data never reaching the producers for them to act upon it.	Consideration has to be given to retailer led supply chains including the ownership and sharing of data. Engagement of these supply chains including the retailers is important to ensure fully value realisation of any national system.
24	Data sharing	Animal health data should be available to producers (their livestock data) and processors (stock they processed.) The majority of plants are in favour of this data being stored in both a national and company data bases with eighty percent in favour of there	Data sharing allows for great value and benefits being realised out of the project.	Business rules for data sharing is required and a national database for data sharing, analysis and benchmarking should be established.

Number	Issue Name	Problem/Success	Impact	Recommendation
		being a national data base. Industry is less enthusiastic about other parties sharing this data but more relaxed if the data is aggregated and individual producers cannot be identified.		
25	Number of pilot trials	State and federal travel and gathering restrictions due to the COVID pandemic and company entry restrictions to ensure continual production resulted in reduced pilot trial numbers and length.	Examples to be used for adoption and extension have been reduced	Increased efforts around extension and adoption should occur with a focus on early adopting plants as examples.
26	Correlation and individual identification	Researchers recommend hook tracking of RFID to line up correlation of data entry. This unfortunately has the same volume of advantages as disadvantages as the data accuracy is reduced when the system is automated and meat inspectors are not moving the system on themselves. It also means that there is no positive entry to ascertain the difference between a missed report and a healthy record against an animal.	Accuracy of data is paramount to confidence in the data and adoption of the project.	Inspection data is maintained manually in correlation with an individual animal.
27	Producer feedback	Consideration should be given to the reporting format, a web-based service with login provides the advantage of allowing for linkage to	Adoption levels are not as high as expected and the full benefits of the project are not realised.	Traditional paper-based methods of extension and reporting need to be

Number	Issue Name	Problem/Success	Impact	Recommendation
		extension material and resources however regional lack of reliable connectivity needs to be considered.		available for some regions.
<i>2018/0064 - Health 4 Wealth (H4W): Red meat pilot trials</i>				
28	Consistency of data collection (subjective grades for severity of conditions)	Consistency and accuracy of data collection is important to ensure producer confidence in the data reported.	Confidence in the data reported is paramount to the producers acting on the animal health disease and defect data to ensure that the value and benefits of the project are realised.	Meat inspection training in the collection of the data is run with refresher courses. New and existing meat inspectors should be consistently trained. Training should include the definitions and consistent application of subjective grades for severity of conditions.
29	Mapping of data captured against the standard	Variation in mapping of could occur for example generic conditions observed (e.g. Cysts) diagnostic conditions where pathological confirmation of the specific causes are attained (e.g. Hydatid Cysts).	Accuracy of data is paramount to confidence in the data and adoption of the project.	Guidelines for the mapping of data should be developed or mapping should be completed by those with expertise and experience in the development of the standard.
30	Standardisation of data	To allow consistent data to be collected, reported, transfers and provided back to producers a standardised and codified language is required.	This is the foundation of the project with all other components of the project being reliant on it.	Work should continue on the national standard to ensure it is maintained up to date and is

Number	Issue Name	Problem/Success	Impact	Recommendation
				practically applicable to stakeholders.
31	Inspection model used	Government meat inspectors are reluctant to collect animal health disease and defect data. Third party and company inspectors are more likely to collect data.	Reliable data collection, and therefore usable data for analysis and feedback.	Strong engagement with meat inspectors is required in general to ensure that they understand the importance of data collection. The DAWR (and meat inspection providers) need to be consulted and engaged with at a higher management level, to ensure reliable data collection address willingness and due to turn over of staff, leave etc.
32	Mob based data capture	A mob-based specification for animal health disease and defect data collection in small stock has been developed but not tested.	Adoption impacted	The mob-based specification be piloted in small stock processing plants.
33	Stakeholder engagement in the design of reports.	Stakeholder engagement in the design of the report ensured that the reports were better understood, user friendly and included the information that the user though was important.	With the user (producer or processor) understanding the feedback reports there is increased use of them and therefore increased adoption.	That stakeholders and users are involved in the development and design of feedback report and systems.
<i>2018/0085 - Development of Factsheets for beef and pork conditions detected in abattoir monitoring - H4W</i>				

Number	Issue Name	Problem/Success	Impact	Recommendation
34	Consideration of supply chain and region	The differentiation between extensive and feedlot producers and northern and southern production variation in the cattle industry should be considered when developing extension material.	Extension material that is not easily understood or relatable will be ignored. This will lead to a lack of adoption	That different supply chains and regions be considered when developing extension material to ensure that it is best suited to the audience.
<i>2020/0021 - An ex-post benefit cost analysis of the validation studies completed in pork, sheep, beef and goat supply chains (H4W)</i>				
35	Standardised application of a meat classification system	Consistency and accuracy of data collection is important to ensure producer confidence in the data reported.	Confidence in the data reported is paramount to the producers acting on the animal health disease and defect data to ensure that the value and benefits of the project are realised.	Verification of data collection through physical and data analysis is also important to ensure accuracy of data collection. Meat inspection training in the collection of the data is run with refresher courses. New and existing meat inspectors should be consistently trained.
36	Extension activities required to facilitate take up	To realise the value in the project producer action must occur. This requires extension action to occur through a number a routes to ensure maximum uptake and adoption.	Lack of adoption will result in decreased value realisation for the project.	Extension actives continue to be funded to ensure project uptake.
37	Addressing data gaps around the costs and benefits of conditions	Data and information on the linkage of peri-mortem findings to animal diseases and then the cost incurred	Fully realisation of the costs and benefits of the project may be realised.	Further analysis and research is undertaken to understand the

Number	Issue Name	Problem/Success	Impact	Recommendation
		due to the disease will allow for full understanding of the costs and benefits that the project can address.		linkages between peri-mortem findings and animal diseases and the costs and benefits of addressing them.
38	Development of a monitoring and evaluation system	To ensure that the full extent of costs and the benefits of the project are understood and realised monitoring and evaluation should occur as further adoption work is completed.	Fully value is identified and realised.	Monitoring and Evaluation systems should be included in further adoption and extension projects.