Evaluating the Socio-economic benefit of the red meat processing industry in regional Australia

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1.0 EXECUTIVE SUMMARY

This report outlines the economic impact of red meat processing facilities in a number of regions around Australia as well as providing estimates of the impact on the individual State economies and Australia as a whole. The impacts, including flow-on or multiplier effects are provided in both absolute values and percentage contribution in terms of:

- Gross industry value added;
- Household income;
- Employment, measured as full-time equivalent jobs.

All economic measures outlined in this report refer to 2014-15.

It also examines the social impact of the sector by examining the social costs associated with the closure of a hypothetical red meat processing facility.

2.0 PROJECT OBJECTIVES

The objective of this project is to provide an estimate of the economic contribution of the red meat processing industry sector across regional Australia at the national, state and individual region levels expressed in terms of full-time equivalent employment, household income and gross industry value added. The data is presented in absolute terms and percentage contribution to the relevant economy. Assessment of the social impacts will also assist the sector in its various research and representation activities.

Each facility participating in the project will receive a confidential report addressing the regional economic benefits of the plant. This can assist them in individual representations at the local, State or Federal level. A copy of the template for the individual facility reports is provided at Appendix 3 of this report. However, no individual facility data is provided in order to maintain confidentiality.

3.0 MILESTONE DESCRIPTION

The Achievement Criteria defined for Milestone 6 for Project 2016-1031, "Evaluating the Socio-economic benefit of the Red Meat Processing Industry in regional Australia", incorporated the preparation of the Final Report incorporating the results of the preceding analyses presented in the reports for Milestones 2, 3 and 4 and summarised in Milestone 5.

As noted in the Milestone 2 report for this Project, the initial input output tables constructed reflected the financial year 2013-14, as at that time of submission the State Accounts for 2014-15 had not been released by the Australian Bureau of Statistics. However, these tables have been updated to 2014-15 to ensure that the individual tables are current and reflect the period for which primary financial data was supplied by participants i.e. 2014-15.

Data was analysed for 31 processing plants. In order to protect the confidentiality of data provided, there was a requirement to make some changes to the regions analysed when compared with the original Project Plan. The regional impacts measured in the following report are for the following:

- New South Wales - the regions of New England and North West, Richmond-Tweed & Coffs Harbour-Grafton (combined) and Riverina (total of 3 regions);
- Queensland - the regions of Fitzroy, Ipswich & Moreton Bay-North (combined), Toowoomba & Darling Downs-Maranoa (combined) and Logan-Beaudesert & Brisbane South (combined) (total of 4 regions);
- Victoria and the regions of Hume& Shepparton (combined) and Warrnambool-South West & Melbourne West (combined) (total of 2 regions);
- South Australia - the region of South Australia-South East (total of 1 region);
- Western Australia – as a whole; and
- Tasmania as a whole.

An assessment is provided of the individual State impacts and the impact of the red meat processing industry on the Australian economy by scaling the data up to reflect total stock slaughtered in 2014-15, derived from the Australian Bureau of Statistics[1].

Further details of the methodology adopted in construction of these base tables are provided in Appendix 2 of this report.

Subsequently a social impact analysis was prepared examining the potential effect of the closure of a hypothetical red meat processing facility and the associated implications for the local community. This report provides a summary of the results of the social impact analysis and conclusions regarding the overall socio-economic impact of the red meat processing industry at the national, State and regional levels.

[1] ABS Cat. No. 7218.0.55.001

4.0 ECONOMIC IMPACT OF THE RED MEAT PROCESSING INDUSTRY

The following section provides an assessment of the economic impact of the red meat processing industry on the relevant States and Australia as a whole. Individual regional impacts, measured where sufficient data was provided, are produced in Appendix 1.

The economic impact is based on analysis of primary data supplied by processors, measured against input output tables for each region constructed from secondary sources. The data reflecting the red meat processing sector was subtracted from the total Food & Beverage Manufacturing sector to ensure that there is no double-counting.

The analysis measures the impact of the red meat processing sector including flow-on or multiplier effects. The effects across other sectors of the economy result from a number of impacts including:

- Direct impacts result from expenditures associated with constructing and operating a facility – labour, materials, supplies, capital;
- Indirect impacts result from the suppliers of the facility purchasing goods and services and hiring workers to meet demand – these "2nd round" impacts would not occur but for facilities operations; and
- Induced impacts results from the employees of the facility purchasing goods and services at a household level.

These impacts have been measured by incorporating marginal rather than average income coefficients. Further details of the methodology adopted are provided in Appendix 2 of this report.

4.1 NEW SOUTH WALES

Ongoing operational expenditure

The impact of the red meat processing industry on the economy of New South Wales has been estimated by applying the weighted average expenditure, income and employment per head slaughtered to the total number of head slaughtered in the State in 2014-15. It should be noted that this assumes that the same ratios apply to all red meat processing facilities across the State.

The assessment of the State impact also differs from the individual regional impacts in that it includes all expenditure made within New South Wales. For individual regional impacts only that expenditure made within the region is included, with the balance being assessed as imports. However, a significant proportion of that expenditure is made elsewhere in New South Wales and therefore has a direct, and associated flow-on, impact on the State economy.

The contribution of the red meat processing industry to the economy of New South Wales is summarised in Table 1.

Measure	Economic impact	
	Value (incl. flow-on impacts)	Contribution to the State economy
Industry value added ($m)	4,780.0	1.0%
Household income ($m)	1,918.6	0.7%
Employment (FTE)	28,842	0.9%

Table 1 - Economic impact, including flow-on effects, red meat processing operations, NSW 14-15

The red meat processing industry is estimated to contribute 1.0 percent of the State's Gross industry value added and 0.9 percent of full-time equivalent (FTE) employment when flow-on effects are taken into account.

The top five industry sectors impacted by the red meat processing sector in terms FTE employment are:

- Agriculture, forestry & fishing;
- Professional, scientific & technical services;
- Transport, postal & warehousing;
- Financial & insurance services; and
- Retail trade.

Capital expenditure

The impact of capital expenditure made by red meat processing facilities in New South Wales in 2014-15 is summarised in Table 2. It should be noted that this data has not been calculated as a pro-rata for all red meat processing plants. Whilst it is reasonable to assume that a weighted average of key indicators relating to operational expenditure from individual plants can be applied at the State level, capital expenditure in any given year will be affected by individual circumstances and requirements. Accordingly, the estimates of the economic impact of capital expenditure by red meat processing facilities can be viewed as extremely conservative.

Measure	Economic impact
	Value (incl. flow-on impacts)
Industry value added ($m)	19.7
Household income ($m)	10.2
Employment (FTE)	112

Table 2 - Economic impact, including flow-on effects, capital expenditure by red meat processing facilities, NSW 14-15

Capital expenditure made by those facilities that provided data for 2014-15 is estimated to contribute almost $20 million in Gross industry value added in the State and an additional 112 full-time equivalent (FTE) employment positions when flow-on effects are taken into account.

4.2 QUEENSLAND REGIONS

Ongoing operational expenditure

The impact of the red meat processing industry on the economy of Queensland has been estimated by applying the weighted average expenditure, income and employment per head slaughtered to the total number of head slaughtered in the State in 2014-15. It should be noted that this assumes that the same ratios apply to all red meat processing facilities across the State.

The assessment of the State impact also differs from the individual regional impacts in that it includes all expenditure made within Queensland. For individual regional impacts only that expenditure made within the region is included, with the balance being assessed as imports. However, a significant proportion of that expenditure is made elsewhere in Queensland and therefore has a direct, and associated flow-on, impact on the State economy.

The contribution of the red meat processing industry to the economy of Queensland is summarised in Table 3.

Measure	Economic impact	
	Value (incl. flow-on impacts)	Contribution to the State economy
Industry value added ($m)	8,255.8	2.9%
Household income ($m)	3,119.9	2.1%
Employment (FTE)	48,659	2.5%

Table 3 - Economic impact, including flow-on effects, red meat processing operations, QLD 14-15

The red meat processing industry is estimated to contribute 2.9 percent of the State's Gross industry value added and 2.5 percent of full-time equivalent (FTE) employment when flow-on effects are taken into account.

The top five industry sectors impacted by the red meat processing sector in terms FTE employment are:

- Agriculture, forestry & fishing;
- Transport, postal & warehousing;
- Retail trade;
- Professional, scientific & technical services; and
- Health care & social assistance.

Capital expenditure

The impact of capital expenditure made by red meat processing facilities in Queensland in 2014-15 is summarised in Table 4. It should be noted that this data has not been calculated as a pro-rata for all

red meat processing plants. Whilst it is reasonable to assume that a weighted average of key indicators relating to operational expenditure from individual plants can be applied at the State level, capital expenditure in any given year will be affected by individual circumstances and requirements. Accordingly, the estimates of the economic impact of capital expenditure by red meat processing facilities can be viewed as extremely conservative.

Measure	Economic impact
	Value (incl. flow-on impacts)
Industry value added ($m)	47.0
Household income ($m)	23.1
Employment (FTE)	300

Table 4 - Economic impact, including flow-on effects, capital expenditure by red meat processing facilities, QLD 14-15

Capital expenditure made by those facilities that provided data for 2014-15 is estimated to contribute $47 million in Gross industry value added in the State and an additional 300 full-time equivalent (FTE) employment positions when flow-on effects are taken into account.

4.3 SOUTH AUSTRALIA

Ongoing operational expenditure

The impact of the red meat processing industry on the economy of South Australia has been estimated by applying the weighted average expenditure, income and employment per head slaughtered to the total number of head slaughtered in the State in 2014-15. It should be noted that this assumes that the same ratios apply to all red meat processing facilities across the State.

The assessment of the State impact also differs from the individual regional impacts in that it includes all expenditure made within South Australia. For individual regional impacts only that expenditure made within the region is included, with the balance being assessed as imports. However, a significant proportion of that expenditure is made elsewhere in South Australia and therefore has a direct, and associated flow-on, impact on the State economy.

The contribution of the red meat processing industry to the economy of South Australia is summarised in Table 5.

Measure	Economic impact	
	Value (incl. flow-on impacts)	Contribution to the State economy
Industry value added ($m)	2,212.1	2.4%
Household income ($m)	851.6	1.8%
Employment (FTE)	14,466	2.2%

Table 5 - Economic impact, including flow-on effects, red meat processing operations, SA 14-15

The red meat processing industry is estimated to contribute 2.4 percent of the State's Gross industry value added and 2.2 percent of full-time equivalent (FTE) employment when flow-on effects are taken into account.

The top five industry sectors impacted by the red meat processing sector in terms FTE employment are:

- Agriculture, forestry & fishing;
- Transport, postal & warehousing;
- Retail trade;
- Wholesale trade; and
- Professional, scientific & technical services.

Capital expenditure

The impact of capital expenditure made by red meat processing facilities in South Australia in 2014-15 is summarised in Table 6. It should be noted that this data has not been calculated as a pro-rata for all red meat processing plants. Whilst it is reasonable to assume that a weighted average of key indicators relating to operational expenditure from individual plants can be applied at the State level, capital expenditure in any given year will be affected by individual circumstances and requirements. Accordingly, the estimates of the economic impact of capital expenditure by red meat processing facilities can be viewed as extremely conservative.

Measure	Economic impact
	Value (incl. flow-on impacts)
Industry value added ($m)	5.0
Household income ($m)	2.6
Employment (FTE)	36

Table 6 - Economic impact, including flow-on effects, capital expenditure by red meat processing facilities, SA 14-15

Capital expenditure made by those facilities that provided data for 2014-15 is estimated to contribute $5 million in Gross industry value added in the State and an additional 36 full-time equivalent (FTE) employment positions when flow-on effects are taken into account.

4.4 Tasmania

The economic impact of the red meat processing sector on the economy of Tasmania is outlined below. In order to protect the confidentiality of data provided, it has not been possible to provide this analysis at a regional level. The analysis is based on ongoing operational expenditure only and does not include one-off capital expenditure as, in many cases, this is not made regionally. An assessment of the impact of capital expenditure has only been assessed for Australia, again to ensure confidentiality of data.

Ongoing operational expenditure

The contribution of the red meat processing industry to the economy of Tasmania is summarised in Table 7.

Measure	Economic impact	
	Value (incl. flow-on impacts)	Contribution to the regional economy
Industry value added ($m)	562.8	2.3%
Household income ($m)	207.9	1.7%
Employment (FTE)	3,931	2.0%

Table 7 - Economic impact, including flow-on effects, red meat processing operations, TAS 14-15

The red meat processing industry is estimated to contribute 2.3 percent of the State's Gross industry value added and 2.0 percent of full-time equivalent (FTE) employment when flow-on effects are taken into account.

The top five industry sectors impacted by the red meat processing sector in terms FTE employment are:

- Agriculture, forestry & fishing;
- Transport, postal & warehousing;
- Retail trade;
- Accommodation & food services; and
- Wholesale trade.

4.5 Victoria Regions

Ongoing operational expenditure

The impact of the red meat processing industry on the economy of Victoria has been estimated by applying the weighted average expenditure, income and employment per head slaughtered to the total number of head slaughtered in the State in 2014-15. It should be noted that this assumes that the same ratios apply to all red meat processing facilities across the State.

The assessment of the State impact also differs from the individual regional impacts in that it includes all expenditure made within Victoria. For individual regional impacts only that expenditure made within the region is included, with the balance being assessed as imports. However, a significant proportion of that expenditure is made elsewhere in Victoria and therefore has a direct, and associated flow-on, impact on the State economy.

The contribution of the red meat processing industry to the economy of Victoria is summarised in Table 8.

Measure	Economic impact	
	Value (incl. flow-on impacts)	Contribution to the State economy
Industry value added ($m)	3,735.8	1.1%
Household income ($m)	1,645.5	0.9%
Employment (FTE)	25,149	1.0%

Table 8 - Economic impact, including flow-on effects, red meat processing operations, VIC 14-15

The red meat processing industry is estimated to contribute 1.1 percent of the State's Gross industry value added and 1.0 percent of full-time equivalent (FTE) employment when flow-on effects are taken into account.

The top five industry sectors impacted by the red meat processing sector in terms FTE employment are:

- Agriculture, forestry & fishing;

- Professional, scientific & technical services;
- Retail trade;
- Transport, postal & warehousing; and
- Wholesale trade.

Capital expenditure

The impact of capital expenditure made by red meat processing facilities in Victoria in 2014-15 is summarised in Table 9. It should be noted that this data has not been calculated as a pro-rata for all red meat processing plants. Whilst it is reasonable to assume that a weighted average of key indicators relating to operational expenditure from individual plants can be applied at the State level, capital expenditure in any given year will be affected by individual circumstances and requirements. Accordingly, the estimates of the economic impact of capital expenditure by red meat processing facilities can be viewed as extremely conservative.

Measure	Economic impact
	Value (incl. flow-on impacts)
Industry value added ($m)	18.2
Household income ($m)	9.0
Employment (FTE)	125

Table 9 - Economic impact, including flow-on effects, capital expenditure by red meat processing facilities, VIC 14-15

Capital expenditure made by those facilities that provided data for 2014-15 is estimated to contribute more than $18 million in Gross industry value added in the State and an additional 125 full-time equivalent (FTE) employment positions when flow-on effects are taken into account.

4.6 Western Australia

The economic impact of the red meat processing sector on the economy of Western Australia is outlined below. In order to protect the confidentiality of data provided, it has not been possible to provide this analysis at a regional level. The analysis is based on ongoing operational expenditure only and does not include one-off capital expenditure as, in many cases, this is not made regionally. An assessment of the impact of capital expenditure has only been assessed for Australia, again to ensure confidentiality of data.

Ongoing operational expenditure

The impact of the red meat processing industry on the economy of Western Australia has been estimated by applying the weighted average expenditure, income and employment per head slaughtered to the total number of head slaughtered in the State in 2014-15. It should be noted that this assumes that the same ratios apply to all red meat processing facilities across the State.

The assessment of the State impact also differs from the individual regional impacts in that it includes all expenditure made within Western Australia. For individual regional impacts only that expenditure made within the region is included, with the balance being assessed as imports. However, a significant

proportion of that expenditure is made elsewhere in Western Australia and therefore has a direct, and associated flow-on, impact on the State economy.

The contribution of the red meat processing industry to the economy of Western Australia is summarised in Table 10.

Measure	Economic impact	
	Value (incl. flow-on impacts)	Contribution to the State economy
Industry value added ($m)	1,397.4	0.6%
Household income ($m)	462.4	0.5%
Employment (FTE)	7,296	0.6%

Table 10 - Economic impact, including flow-on effects, red meat processing operations, WA 14-15

The red meat processing industry is estimated to contribute 0.6 percent of the State's Gross industry value added and 0.6 percent of full-time equivalent (FTE) employment when flow-on effects are taken into account.

The top five industry sectors impacted by the red meat processing sector in terms FTE employment are:

- Agriculture, forestry & fishing;
- Retail trade;
- Transport, postal & warehousing;
- Professional, scientific & technical services; and
- Other services.

4.7 Australia

The impact of the red meat processing industry on the Australian economy has been estimated by applying the weighted average expenditure, income and employment per head slaughtered to the total number of head slaughtered in each State in 2014-15. It should be noted, however, that the total impact on the national economy, when flow-on effects are taken into account, is greater than the aggregate for the relevant States. This is a result of higher flow-on multipliers at the national level and the impact of inner-state expenditure.

Ongoing operational expenditure

The overall impact of the red meat processing sector on the economy of Australia is summarised in Table 11.

Measure	Economic impact	
	Value (incl. flow-on impacts)	Contribution to the national economy
Industry value added ($m)	22,906.2	1.5%
Household income ($m)	8,721.3	1.1%
Employment (FTE)	134,702	1.4%

Table 11 - Economic impact, including flow-on effects, red meat processing operations, Australia, 2014-15

The red meat processing industry is estimated to contribute 1.5 percent of Australia's Gross industry value added and 1.4 percent of full-time equivalent (FTE) employment when flow-on effects are taken into account.

The top five industry sectors impacted by the red meat processing sector in terms FTE employment are:

- Agriculture, forestry & fishing;
- Transport, postal & warehousing;
- Professional, scientific & technical services;
- Retail trade; and
- Wholesale trade.

Capital expenditure

The impact of capital expenditure made by red meat processing facilities in Australia in 2014-15 is summarised in Table 12. It should be noted that this data has not been calculated as a pro-rata for all red meat processing plants. Whilst it is reasonable to assume that a weighted average of key indicators relating to operational expenditure from individual plants can be applied at the State and national level, capital expenditure in any given year will be affected by individual circumstances and requirements. Accordingly, the estimates of the economic impact of capital expenditure by red meat processing facilities can be viewed as extremely conservative.

Measure	Economic impact
	Value (incl. flow-on impacts)
Industry value added ($m)	90.0
Household income ($m)	44.8
Employment (FTE)	573

Table 12 - Economic impact, including flow-on effects, capital expenditure by red meat processing facilities, Australia, 14-15

Capital expenditure made by those facilities that provided data for 2014-15 is estimated to contribute $90 million in Gross industry value added in the State and an additional 573 full-time equivalent (FTE) employment positions when flow-on effects are taken into account.

4.8 Summary of Economic Impact Analysis

The red meat processing industry is estimated to contribute just under $23 billion of value added to the Australian economy including flow-on impacts, equivalent to 1.5 percent of Australia's Gross industry value added. It generates 134,000 jobs equivalent to 1.4 percent of full-time equivalent (FTE) employment when flow-on effects are taken into account.

The top five industry sectors impacted by the red meat processing sector in terms FTE employment are:

- Agriculture, forestry & fishing;
- Transport, postal & warehousing;

- Professional, scientific & technical services;
- Retail trade; and
- Wholesale trade.

The red meat industry is a relatively high value adding and employment generating industry when compared to the economy as a whole. The contribution of the red meat processing sector to employment in other sectors of the economy is significant, supporting in excess of one percent of full-time equivalent employment across the national economy.

The sector underpins more than 10 percent of total full-time equivalent employment in the Agriculture, forestry & fishing sector. It also supports more than 3 percent of total full-time equivalent employment in the Pulp, paper & converted paper product manufacturing sector and 2 percent of employment in the Electricity, gas, water & waste services sector. The overall contribution of the sector in terms of percentage of the total workforce supported, by industry sector, is illustrated in Figure 1.

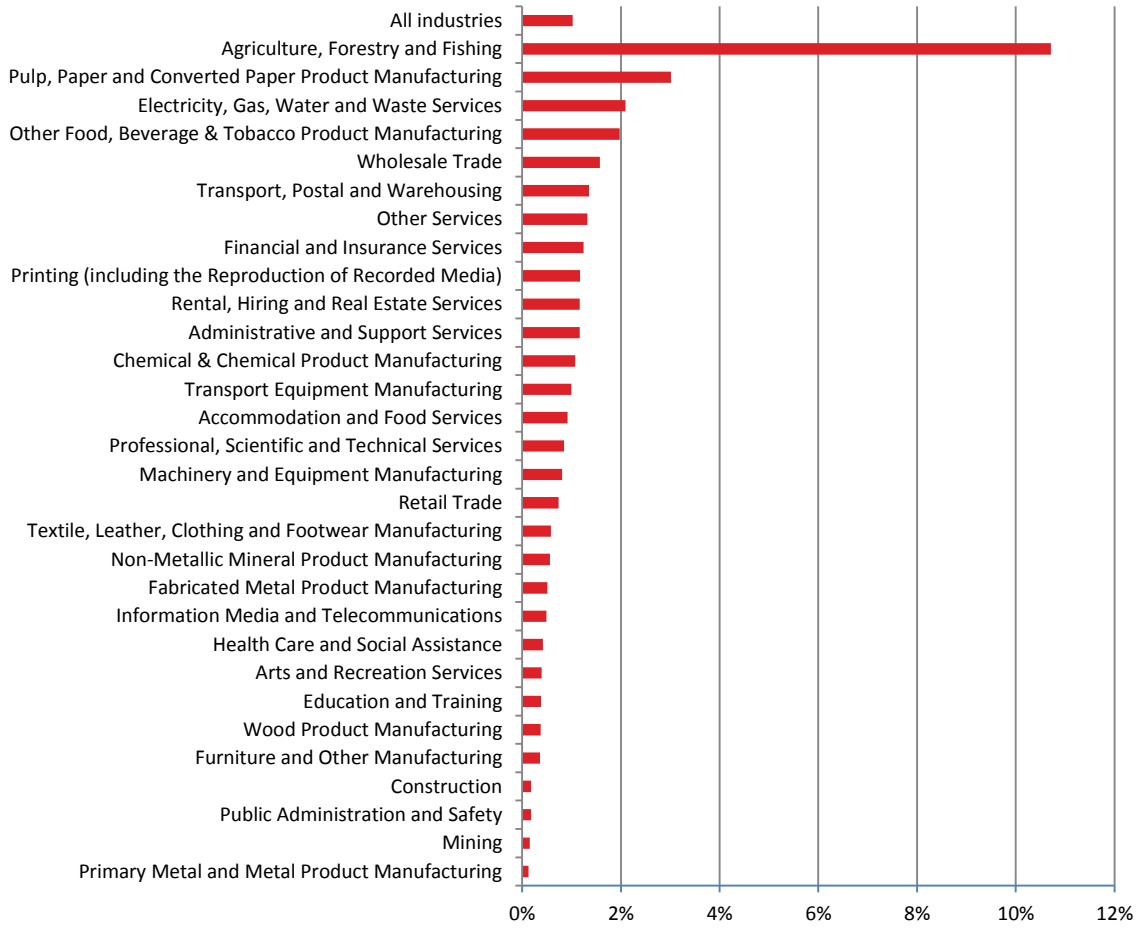

Figure 1 - Proportion of FTE employment by industry sector supported by red meat processing, Australia, 2014-15

The contribution of the red meat processing sector to industry value added, and therefore to gross domestic product, is also significant. Analysis of the industry value added per full-time equivalent employee, after allowing for flow-on impacts, is provided in Table 13.

It should be noted that the analysis for other sectors of the food and beverage manufacturing industry is derived from secondary data in the 2012-13 national input output table at 114 sectors, updated to reflect 2014-15 employment and values. As the values for red meat processing include analysis of primary data supplied for this Project, a direct comparison in absolute terms may underestimate the other industry sectors. However, the table does illustrate that the industry value added per Full-time equivalent employee (including flow-on effects) generated by red meat processing is generally substantially higher than for other sub-sectors of the food and beverage manufacturing industry.

The average value for all industries of $152,300 is derived from the National Accounts for 2014-15 and does not include flow-on effects as these are implicit in the inter-industry linkages for the national economy.

Industry Sector	Industry value added per FTE (incl. flow-on effects)
Red Meat Processing	$170,000
Meat and Meat Product Manufacturing	$132,500
Processed Seafood Manufacturing	$156,900
Dairy Product Manufacturing	$143,100
Fruit and Vegetable Product Manufacturing	$167,800
Oils and Fats Manufacturing	$157,700
Grain Mill and Cereal Product Manufacturing	$162,200
Bakery Product Manufacturing	$104,400
Sugar and Confectionery Manufacturing	$151,600
Other Food Product Manufacturing	$155,000
Total Food & Beverage Product Manufacturing	$144,100
Average all industries	$152,300

Table 13 - Gross industry value added per FTE employee, incl. flow-on impacts, selected industry sectors, Australia, 14-15

On average, the red meat processing sector generates approximately $170,000 per FTE employee compared with $144,100 for the food and beverage product manufacturing sector as a whole and $152,300 for all industries in Australia in 2014-15. The red meat processing sector, whilst accounting for just over 0.3 percent of the direct full-time equivalent workforce in Australia in 2014-15, contributed 1.5 percent of the nation's Gross industry value added when flow-on effects are taken into account.

Moreover, the red meat processing industry is a major contributor to the regional economies identified in this report, with its impact reaching more than 5 percent of value added and in excess of 4 per cent of full-time equivalent employment in some cases. The red meat processing industry can therefore be considered to be a significant contributor to the Australian economy and, at the regional level, serves to support a substantial proportion of the economy, including the associated social impacts. The latter is addressed in the following section of this report.

5.0 SOCIAL IMPACT OF THE RED MEAT PROCESSING INDUSTRY

The social impact of the red meat processing sector, or any other industry sector for that matter, is primarily driven by employment. The impact of the closure or down-sizing of an individual facility can have serious negative effects on the local community whereas the impact of the closure of an industry sub-sector (defined as the closure of a number of business operations) can have a severe impact on the national economy. There have been numerous studies undertaken on the closure of several

automotive manufacturing plants, primarily located in South Australia and Victoria, which clearly demonstrate that the overall impact is not restricted to the immediate locality in which they operate. Studies have also been undertaken, primarily at local and regional levels, of the impact of mine closures and the cessation of operations of a variety of manufacturing facilities which contributed a significant proportion of employment in the locations examined.

Industry economic sustainability is a critical factor at every level of the economy and has consequent social impacts. For the red meat processing sector, the key driver of its economic sustainability is its profitability and competitiveness.

This section summarises the generic social impacts of an industry closure and specific effects pertaining to the red meat processing sector. Finally it examines the potential impact on a regional economy in which a red meat processing facility contributes a significant proportion of employment and other associated economic measures.

5.1 Generic Impacts of Industry Closure

The closure or even down-sizing of any facility can have broad-reaching effects depending on the level of integration with other sectors of the economy. The level of social impact at the local and regional level is also affected by the diversity of the local economy. If the facility in question forms a significant proportion of the local workforce and underpins a major proportion of other sectors of the economy, either through direct purchases of goods and services or expenditure by its employees, then the impact can be severe. A local economy which is more diverse may be more resilient to the changes and better able to absorb the impact.

The effect of a closure can also be affected by the timing. A planned exit, such as that often found with mine closures where the end of the useful economic life can be estimated in advance, can result in a gradual reduction in employment numbers. This in turn may allow the affected employee's time to make decisions about their future, be it seeking alternative employment, undertaking training in new skills and competencies or taking voluntary redundancy packages. It may also permit the local community time to assess how best to deal with the future job losses, including identifying potential opportunities to attract replacement employment opportunities and offering incentives to encourage this.

However, sudden and dramatic closures, such as typically occur in meat processing when volumes sold and prices received can fluctuate sharply and unexpectedly, can have a much more serious impact. The employees have little or no warning and are therefore much less likely to have planned for this eventuality. The longer the individual has been employed at the facility, the greater the impact is likely to be, both financially and personally.

The overall social impacts of a facility closure can be summarised at three levels, the impact on the individual, the impact on the immediate community and the impact on the wider economy. Each of these is addressed below.

Individual impact

Clearly the first and most measurable impact on the individual, and their associated family if applicable, is a loss of income. However, the impact on the self-esteem of the employee and the associated psychological impacts on their partner and children can be equally, if not more, significant[2].

It has been noted that "*People who lose their jobs unexpectedly are likely to take about six weeks to come to terms with their situation; during that time many will feel paralysed and unable to search for work effectively*".[3] This situation can be exacerbated amongst those employees who, whilst not necessarily being concerned about the "prestige" of their employment, perceive their workplace to be their main avenue of social interaction.

The ability for individuals to obtain new employment can be affected by a number of characteristics including:

- Age – older workers are more likely to face difficulties in obtaining a new position;
- Qualifications and experience – those with lower qualifications and skills may find it more difficult to find new employment, although they may be more likely to accept "any job". Conversely, those with high skill levels may find it easier to obtain a new position but it may not fully utilise their expertise;
- Literacy and numeracy levels – those with lower levels of literacy and numeracy may also find it more difficult to obtain new employment;
- Ability and willingness to relocate – younger workers without either dependents or financial commitments may find it easier to relocate when seeking new employment. However, those with a partner in employment and / or school-age children may find relocation more difficult, as will those with strong community ties. There are also financial considerations associated with relocating. Housing costs in areas with greater employment opportunities may well be higher. When combined with a likely financial loss from selling their existing home if it has to be done urgently or if coinciding with other individuals in the same position, this can make relocation appear impossible;
- Financial security – those workers who have savings or a partner in full time employment may be able to take time to seek new job opportunities that suit their needs and requirements. However, those in financial stress may well be obliged to take any job opportunity that generates an income.

Notwithstanding the ability to find new employment, sudden job loss can have significant long term impacts on the individual. There is the direct loss of income which has an immediate effect and may result in having to draw on savings (if any), loss of superannuation contributions impacting on retirement options and the likelihood that any new employment found will be at a lower skill level and remuneration than that previously held.

Community impact[4]

[2] Mendolia, S. The impact of job loss on family mental health. University of New South Wales. 2009
[3] http://theconversation.com/what-the-departure-of-toyota-holden-and-ford-really-means-for-workers-23137
[4] http://banarra.com/news/article/managing-the-social-impacts-of-mine-closure

The impact on the local community will vary depending upon the significance of the industry locally, the proportion of the workforce employed in it and the extent of inter-industry linkages. However, the effect on community wellbeing cannot be underestimated.

Key impacts on the community, excluding impacts on unemployment rates, include:

Education and health services – Out-migration of some sectors of the population, seeking employment elsewhere, can lead to a subsequent reduction in government funding provided to education and health services. This can particularly affect the education sector if families with school-age children choose or need to leave the local area. There is generally a formula applied to funding for teaching positions which primarily relates to the number of school-age children in the community.

Similarly, should there be a significant outflow of residents, health services may be reduced when the population base reaches a level whereby it cannot sustain a variety of health professionals. A loss of General Practitioners, dental professionals and nursing staff are the most likely outcome in regional and rural communities which may not have direct access to other specialised health professionals. However, the impact of these losses, perhaps necessitating the residents to travel some distance to access services, can in turn increase levels of out-migration. Schools may lose teaching staff and health services may be cut. This issue may be exacerbated if the facility has historically provided funding for these services.

House prices – Should the closure of red meat processing facilities be accompanied by individuals or families leaving the community and selling their homes, this can have the effect of lowering house prices to the extent whereby the realizable sales price does not cover the equity. This can impact not only on the individual directly impacted by the job loss, but also the wider community.

Other services – Loss of direct expenditure by the facility in the local region, combined with reduced spending by the previous employees as a result of loss of income, can result in other sectors of the economy becoming unsustainable. *Retail trade* and *Accommodation & food services* facilities in particular are likely to be impacted by reduced personal expenditure.

Community organisations - A loss of population, combined with potential may reduce the number of volunteers within the community, placing pressure on local organisations including volunteer emergency services, of particular significance in rural and regional communities. This issue may be exacerbated if the facility previously sponsored these groups.

Economy wide impact

The economy wide impacts centre around loss of productivity including export sales, increased unemployment with the attendant social and economic costs, loss of income tax revenue and increased welfare payments.

5.2 Social Impacts of Cessation of Red Meat Processing Nationally

Data from the 2011 Census indicates that approximately 0.25 percent of the workforce was employed in the meat processing sector. Analysis of changes in employment patterns and converting total employment to full-time equivalent jobs for 2014-15, suggests that the sector directly employs

approximately 34,000 persons or 0.4 percent of the total full-time equivalent workforce in Australia in that year.

Previous studies undertaken by the Consultants for AMPC examined the characteristics of the workforce in the red meat processing sector which could impact on the social impacts of cessation of the sector's operations.

Age of the workforce

The mean age of employees in the meat processing sector is 37.8 years which compares with an average age of the total Australian workforce of 40.4 years. However, there are indications that the industry is becoming less attractive to younger workers. At the 2011 Census, 19 percent of the workforce in meat processing was aged less than 24 years compared with 23 percent five years earlier. Conversely the proportion of employees aged 45 years and above increased from just under 29 percent in 2006 to more than 45 percent in 2011. Those in the latter age category are more likely to experience difficulty in obtaining new positions, particularly when combined with education and qualification levels outlined below.

Occupation

Employment in the meat processing sector, when analysed by occupation is significantly different to the Australian workforce overall. Approximately two-thirds of those employed in the red meat processing sector are in occupations classified as Labourers under the 2006 ANZSCO classification . By comparison, less than 10 percent of the total national workforce falls into this occupation category.

Clearly, if the red meat processing sector ceased operations there would be limited employment opportunities available, particularly for those employed as meat boners, slicers and slaughterers, which would be commensurate with their skills and experience. In order to obtain new employment, these workers may have to undertake training in other fields or seek work in lower or unskilled occupations with a likely resultant drop in income.

Education and qualifications

Amongst those employed as Labourers in the red meat processing sector, almost 65 percent had not completed a Year 12 or equivalent school level education whilst 72 percent had no post-school qualifications. Again, this is likely to impact on their ability to obtain new employment if their existing jobs cease to exist.

Employment characteristics

Excluding those employed in salaried positions (generally those in managerial and administrative positions) approximately 80 percent of the workforce in the red meat processing sector are employed on a daily hire basis with the balance of 20 percent employed on a casual basis. Whilst under both categories, there is no guarantee of work on any given day, the former group in particular can reasonably expect to be employed for a given number of days per year.

There may be a greater level of insecurity amongst employees in the red meat processing sector than across the economy as a whole, but this does not necessarily lessen the psychological impact of sudden job loss or the impact of loss of income.

Employment impacts

Closure of the red meat processing industry would result in the loss of approximately 34,000 direct full-time equivalent positions. Based on the previous analysis, it is estimated that approximately 22 percent of these would have been employed in managerial, professional or technical occupations and may therefore be in a better position to find alternative employment, albeit at a lower skill level or necessitating relocation from their existing place of residence.

Amongst the remaining 78 percent, assuming a similar age distribution to that found for the sector as a whole, it could be expected that almost half would be aged 45 years and above, at least two-thirds would have no post-school qualifications and for those possessing a Certificate II or III qualification, there would be no suitable jobs available, even if the worker was willing to relocate.

Based on the above, it is possible that almost 40 percent of those who had lost their job would still be unemployed six months later and in reality this number could be higher. The impact of difficulties in obtaining new employment often leads to such a level of discouragement that some individuals leave the workforce permanently, having to rely on welfare payments to survive.

The above only addresses the direct impact of cessation of the red meat processing sector. It is estimated that a further 100,000 full-time equivalent jobs are underpinned by the sectors operations nationally. These jobs are primarily in the sectors of Agriculture, forestry & fishing, Transport, postal & warehousing and Professional, scientific & technical services but impact on all sectors of the economy. Not all of these jobs would be lost permanently but, in the absence of development of new opportunities to fill the gap, again a significant number of people would become unemployed, at least in the short term.

The current unemployment rate nationally is 5.8 percent. Cessation of operations of the red meat processing sector and the associated flow-on impacts could see this increase to more than 7.0 percent, at least in the short term.

Health impacts

It is well-recognised that sudden job loss can result in psychological impacts which may result in negative mental health impacts including anxiety, depression, mood disorders and, in the most extreme cases, suicide. It has been estimated that approximately $8 billion was spent in Australia in 2013-14 on mental health related services. Of this, approximately 23 percent was spent on community mental health care services, the category most likely to be accessed by people who have lost their job and who are seeking assistance.

In the same period, approximately 8.7 million community mental health care service contacts were recorded, equating to expenditure of approximately $211 per contact. There are no readily available statistics on the prevalence of psychological disorders resulting from unemployment that require some form of medical intervention. However, using a very conservative assumption that 10 percent of the total workforce (including flow-on employment) who lost their job as a result of the estimated impact of cessation of operations of the red meat processing sector utilised community mental health care services once, would suggest a health related cost of approximately $2.8 million. Bearing in mind that any individual accessing these services would be likely to make more than one contact and that it does not make any allowance for visits by partners or other family members, the actual costs could be significantly higher.

Economic impacts

The key economic impacts of cessation of operations of the red meat processing sector, which in turn have implications for income for national, State and local governments and their potential ability to support a variety of welfare related interventions, are outlined below.

In the first instance, the loss of the red meat processing sector would result in an estimated reduction in gross domestic product of $23 billion. Revenue derived from personal tax payable would be lost at an estimated $709 million per annum whilst welfare payments made to unemployed individuals could be as high as $733 million – a net loss of $1.4 billion to the Federal government. In addition, it could be reasonably expected that there would be a loss of revenue derived from company tax.

The effects on State governments include losses of payroll tax revenue and increases in State-funded health care costs. Local governments would lose income derived from rates and taxes as well as potential outflow of population which, in some cases, could make the viability of individual communities unsustainable.

5.3 Social Impacts of the Red Meat Processing Industry at the Local Level

The following section provides an assessment of the social impact of the red meat processing industry on a hypothetical Local Government Area (LGA) in regional Australia each with a resident population of less than 10,000 and approximately 5 percent of the resident workforce employed in the meat processing sector at the time of the 2011 Census. It assumes that a red meat processing facility will cease operations, for whatever reason, and measures the social impact on the local community. The analysis draws on real data but has been averaged for three LGAs to ensure both confidentiality of data supplied by individual processors and to preclude any likelihood of an unjustifiable suggestion that any individual red meat processing plant is likely to cease operations. It is based on data published by various Government sources as well as some primary data provided by individual red meat processing facilities. Similar results could reasonably be expected for communities elsewhere in Australia of comparable size and proportion of the resident workforce employed in the red meat processing sector.

Characteristics of the hypothetical LGA

The hypothetical LGA, based on an average of three regional LGAs, is assumed to have the following characteristics:

- Total Gross Regional Product (GRP) in 2014-15 of approximately $287 million;
- Total full-time equivalent workforce of approximately 2,130 persons;
- Key employment sectors amongst the full-time equivalent workforce of:
  - Agriculture, forestry & fishing – 15.4%;
  - Health care & social assistance – 10.4%;
  - Retail trade – 8.7%;
  - Construction – 8.7%; and
  - Transport, postal & warehousing – 8.1%.

- The key sectoral contributions to Gross Industry Value Added (GIVA), excluding Ownership of Dwellings, are:
  - Agriculture, forestry & fishing – 10.0%;
  - Transport, postal and warehousing – 10.0%;
  - Public administration and safety – 8.2%;
  - Construction – 7.0%; and
  - Health care & social assistance – 8.1%.

The contribution of the red meat processing facility on the economy of the hypothetical LGA is summarised in Table 14.

Measure	Economic impact	
	Value (incl. flow-on impacts)	Contribution to the regional economy
Industry value added ($m)	40.4	15.3%
Household income ($m)	16.5	13.2%
Employment (FTE)	350	16.4%

Table 14 - Economic impact, including flow-on effects, red meat processing, hypothetical LGA, 14-15

When flow-on impacts are taken into account, cessation of operations of the red meat processing facility would clearly have a significant impact on the local economy which in turn would be expected to generate significant negative social consequences.

Unemployment levels

The current unemployment level, measured as the four quarter average to September 2015, in the aggregated LGAs is 4.4 percent[5]. This is considerably lower than for the regional part of the relevant State as a whole (i.e. excluding the greater capital city area) which recorded a significantly higher unemployment rate for the same period.

Cessation of the operations of the meat processing facility and the associated loss of direct employment would have the impact of more than doubling the unemployment rate to 9.3 percent. This does not include flow-on impacts. The impact of direct job loss would result in a high concentration of unemployment amongst people with similar skills and experience, creating major difficulties in obtaining new employment locally.

When the flow-on impacts are included, total jobs impacted by the closure of the facility could serve to increase the local unemployment rate to 17 percent, although it should be noted that not all of the flow-on impact would happen immediately. The proportion of the flow-on impact resulting from indirect and induced impacts would be more gradual but significant nonetheless.

Health costs

When examined at the macro-level, it was conservatively assumed that only 10 percent of those who had lost their job would seek community mental health care services. However, at the micro-level, the

[5] Department of Employment, Small Area Labour Markets, September Quarter 2015.

incidence of stress-related mental health issues could be far greater given the overall impact on the local unemployment rate. Even amongst businesses not directly affected by the closure of the facility, concerns about the future viability could be expected to increase stress levels.

It is recognised[6] that people living in rural communities are more likely to experience mental health disorders than those in urban environments, as well as generally having poorer health outcomes overall. This is a result of a combination of factors including:

- Impact of ecological conditions on livelihood, particularly in areas with a strong reliance on the agricultural sector;
- Limited availability of health resources to deal with mental health issues;
- Privacy concerns in small communities preventing people from seeking help - the issue of stigma in relation to mental health issues remains a key factor in people's postponement or avoidance of getting help, particularly in smaller rural communities where it is thought that "everyone knows everyone else's business".

The above factors may suggest that individuals directly or indirectly affected by the facility closure may be less likely than the population as a whole to seek medical intervention. Unfortunately, the result of this could be increased levels of self-harm or even suicide, already known to be more prevalent in rural communities. Suicide rates amongst rural communities are known to be consistently higher than in urban communities, with recent research indicating that 15-24 year old males in regional areas are 1.5-1.8 times more likely to end their life by suicide than their urban counterparts. The incidence is up to six times higher in very remote locations. Inter-regional comparisons are also poor for 25-44 year old and 45-64 year old non-metropolitan males.

Impact on health services

Based on the ratio of persons employed in the Health care & social assistance sector and again assuming a scenario whereby 50 percent of those becoming unemployed as a direct or flow-on impact of the theoretical closure of the red meat processing sector choose to leave the area, there would be a direct impact on health-related jobs with the loss of:

- Hospital staff – 4 jobs lost;
- General practitioners – between 1 and 2 jobs lost;
- Dental practitioners – 1 job lost; and
- Other allied health services – 1 job lost.

Whilst these numbers may not appear to be significant in themselves, the effect, both real and perceived, on the remaining population can be dramatic. At the small area level, these numbers can reflect approximately 10 percent of health care service providers in the relevant categories.

Impact on education services

It has been assumed that the distribution of school-age children amongst that component of the working age population that have been made unemployed is the same as is found for the workforce

[6] Australian Institute of Health and Welfare http://www.aihw.gov.au/rural-health-impact-of-rurality/

overall. Under a scenario whereby 50 percent of those becoming unemployed as a direct or flow-on impact of the theoretical closure of the red meat processing sector choose to leave the area, there would be a direct impact on teaching jobs with the loss of:

- Pre-school teachers – 1 job lost;
- Primary school teachers – 6 jobs lost; and
- Secondary school teachers – 5 jobs lost.

However, as funding for schools is also affected by the number of pupils, if out-migration was concentrated in one part of the hypothetical LGA, it could potentially result in school closures, particularly in the primary education sector.

Impact on other services

Even without an allowance for out-migration, the significant reduction in household income expected from the job losses would, by necessity, reduce expenditure in other local tertiary sector providers and particularly discretionary expenditure. Retail outlets, cafes & restaurants and entertainment facilities would be expected to be the first to feel the brunt of reduced spending. However, other parts of the economy can also be impacted as individuals decide to "make do", or delay what might otherwise have been seen as a necessary spend. This in turn can have a negative impact on overall community wellbeing as addressed below.

Impact on individual and community wellbeing

There is increasing emphasis on measuring "wellbeing" be it at the individual or community level. A recent report published by the University of Canberra examined the wellbeing of individuals and communities in regional Australia. For the individual, a person who has high levels of wellbeing "is more broadly defined as someone who is able to realise their own potential and contribute to their community". Some of the determinants of individual wellbeing include:

- Financial capital, in the form of household financial and local economic wellbeing;
- Human capital, focusing on confidence in skills and education, health and community leadership and collaboration;
- Institutional capital, in the form of having a say and being heard, and equity and inclusion;
- Social capital, focusing on spending time with friends and family, getting involved in the local community, and sense of belonging;
- Physical capital, including access to services and infrastructure, access to telecommunications, crime and safety, and landscape and aesthetics; and
- Natural capital, in the form of perceived environmental health.

With regard to community wellbeing, this is not simply the sum or aggregate of individual wellbeing. Rather it is a function of factors where the population assesses their views on the level of community spirit, ability to cope with challenges, has a bright future and is a place where they want to live. The future of Australia's rural and regional communities is often a subject of debate, with concerns about loss of population in some communities, rapid influx of population in others, and a desire to maintain or increase the overall wellbeing of many communities. Communities with higher wellbeing, sometimes called high "liveability", are those which function successfully to provide a high quality of life for all their residents. A community with high liveability, it is argued, is more likely to retain its

existing residents, and to attract new people to live in it. It is also more likely to support high levels of wellbeing for its residents.

Whilst the data provided in the study does not permit analysis to the level of the hypothetical LGA, some indicators for the general region include compared with the national average for rural and regional Australia provided in brackets:

- Community wellbeing – 5.60 (5.47);
- Community economic wellbeing – 3.37 (3.54);
- Confidence in skills and education – 5.29 (5.17);
- Inclusion and equity – 3.66 (3.53); and
- Sense of belonging – 5.39 (5.32).

A similar analysis for regions that currently have significantly higher levels of unemployment than the aggregated LGAs, exhibit lower scores for the indicators above than observed for the region in which the hypothetical LGA is located. This analysis does not mean that there is a definite correlation between unemployment levels and community wellbeing but rather illustrates a comparison. It may suggest that closure of the facility would significantly reduce community wellbeing or livability overall.

Economic impact locally

The key economic impacts of cessation of operations of the hypothetical red meat processing facility, which in turn have implications for income for national, State and local governments and their potential ability to support a variety of welfare related interventions.

In the first instance, the loss of the red meat processing sector would result in an estimated reduction in gross regional product of $40 million. Revenue derived from personal tax payable would be lost at an estimated $1.5 million per annum whilst welfare payments made to unemployed individuals could be as high as $2.8 million – a net loss of $4.3 million to the Federal government. In addition, it could be reasonably expected that there would be a loss of revenue derived from company tax.

The effects on State governments include losses of payroll tax revenue and increases in State-funded health care costs. Local governments would lose income derived from rates and taxes as well as potential outflow of population which, in some cases, could make the viability of individual communities unsustainable.

5.4 Summary of Social Impacts

Cessation of the red meat processing sector's operations nationally would have major economic and social impacts. The economic and social impacts would be clearly even more profound at the local level in regions which have a significant proportion of the population employed in the sector.

The impact on local unemployment rates could be of such a magnitude that it increases four-fold when flow-on effects are included, in turn impacting on stress-related mental health issues which already have a higher incidence in rural communities than in urban settings.

A major feature in the micro level impacts is that the concentration of unemployment amongst individuals with similar skills and experience would suggest that they would experience difficulty in

obtaining new employment locally and, in many cases, may have to leave the region. This can impact on the number of education and health care professionals that can be supported locally as well. Reduced levels of expenditure, whether as a result of out-migration or a decrease in household income are also likely to impact on other tertiary service sectors and on business confidence generally. This in turn affects the local community overall, with a potential reduction in the ability to support a range of services. Overall community wellbeing would decrease and there is the potential for the virtual collapse of the community altogether.

6.0 CONCLUSION

The red meat processing sector makes a significant contribution to the national economy in terms of employment, household income and industry value added, as summarised in Table 15.

Measure	Economic impact	
	Value (incl. flow-on impacts)	Contribution to the national economy
Industry value added ($m)	22,906.2	1.5%
Household income ($m)	8,721.3	1.1%
Employment (FTE)	134,702	1.4%

Table 15 - Economic impact, including flow-on effects, red meat processing operations, Australia, 14-15

When flow-on effects are taken into account, red meat processing contributes 1.5 percent of national industry value added, 1.1 percent of household income and 1.4 percent of full-time equivalent employment.

The contribution of the red meat processing sector to employment in other sectors of the economy is significant, supporting in excess of one percent of full-time equivalent employment across the national economy. The sector underpins more than 10 percent of total full-time equivalent employment in the Agriculture, forestry & fishing sector. It also supports more than 3 percent of total full-time equivalent employment in the Pulp, paper & converted paper product manufacturing sector and 2 percent of employment in the Electricity, gas, water & waste services sector.

The contribution of the red meat processing sector to industry value added, and therefore to gross domestic product, is also significant. On average, after allowing for flow-on impacts, the red meat processing sector generates approximately $170,000 per FTE employee compared with $144,100 for the food and beverage product manufacturing sector as a whole and $152,300 for all industries in Australia in 2014-15. The red meat processing sector, whilst accounting for just over 0.3 percent of the direct full-time equivalent workforce in Australia in 2014-15, contributed 1.5 percent of the nation's Gross industry value added when flow-on effects are taken into account.

Moreover, the red meat processing industry is a major contributor to the regional economies identified in this report, with its impact reaching more than 5 percent of value added and in excess of 4 percent of FTE employment in some cases. Assuming the closure of the industry, serious negative social impacts would be felt across the country. However, at the local level, closure of an individual facility could have catastrophic impacts on the local community.

A major feature in the micro level impacts is that the concentration of unemployment amongst individuals with similar skills and experience would suggest that they would experience difficulty in obtaining new employment locally and, in many cases, may have to leave the region. This can impact on the number of education and health care professionals that can be supported locally as well. Reduced levels of expenditure, whether as a result of out-migration or a decrease in household income are also likely to impact on other tertiary service sectors and on business confidence generally. This in turn affects the local community overall, with a potential reduction in the ability to support a range of services. Overall community wellbeing would decrease and there is the potential for the virtual collapse of the community altogether.

The project represents a significant achievement by, and for, the red meat processing industry. A large number of processors have provided up-to-date financial data to enable establishment of a comprehensive data set on industry costs which have enabled the industry to determine the socio-

economic impact of the industry regionally and nationally. To the knowledge of the Consultants, no other Australian industry has such a database.

There are also substantial secondary benefits for the industry generated by this research. The model can be used for analyzing the impact on the industry, and hence on the regional and national economies, of regulatory, technical or other developments which might impact it – e.g. new regulations, innovations or practices that affect the cost structure of the industry.

Moreover, the data set provides the foundation for comparing the industry's costs with its competitors internationally.

7.0 APPENDICES

8.0 APPENDIX 1 – REGIONAL IMPACTS

The economic impact of the red meat processing sector on the economy of 10 regions across Australia is outlined below. The analysis is based on ongoing operational expenditure only and does not include one-off capital expenditure as, in many cases, this is not made regionally. However, an assessment of the impact of capital expenditure at the regional level will be provided to individual processors in their confidential report. The overall impact of capital expenditure in 2014-15 has, however, been assessed for each State as a whole and for Australia.

The economic measures evaluated, including flow-on impacts are industry value added, household income and full-time equivalent employment. The top five industry sectors impacted in terms of full-time equivalent employment are also provided.

8.1 New South Wales Regions

The contribution of the red meat processing industry to three regions in New South Wales is summarised below.

Measure	Economic impact		
	Value (incl. flow-on impacts)	**Contribution to the regional economy**	**Top 5 industries impacted (FTE employment)**
New England & North West			
Industry value added ($m)	580.4	6.8%	Agriculture, forestry & fishing
Household income ($m)	155.5	3.7%	Retail trade
Employment (FTE)	2,634	4.1%	Other services
			Health care & social assistance
			Education & training
Richmond-Tweed & Coffs Harbour-Grafton (combined)			
Industry value added ($m)	123.7	0.9%	Health care & social assistance
Household income ($m)	85.3	1.3%	Accommodation & food services
Employment (FTE)	1,531	1.5%	Retail trade
			Other services
			Education & training
Riverina			
Industry value added ($m)	523.7	6.5%	Agriculture, forestry & fishing
Household income ($m)	188.2	4.8%	Other food & beverage manufacturing
Employment (FTE)	3,543	5.5%	Retail trade
			Health care & social assistance
			Wholesale trade
New South Wales			
Industry value added ($m)	4,779.9	1.0%	Agriculture, forestry & fishing
Household income ($m)	1,918.6	0.7%	Professional, scientific & technical services
Employment (FTE)	28,842	0.9%	Transport, postal & warehousing
			Financial & insurance services

			Retail trade

Table 16 - Economic impact, including flow-on effects, red meat processing, regional New South Wales, 14-15

The overall impact measured in terms of full-time equivalent employment is significantly higher in each of the three regions examined than for the State as a whole. This is not surprising given that a major proportion of the New South Wales workforce are employed in the greater Sydney area rather than in regional parts of the State. However, it is worth noting that the key industry sectors underpinned by the red meat processing sector at the State level include Professional, scientific & technical services, Transport, postal & warehousing and Financial & insurance services, none of which are recorded in the top 5 in any of the regions examined. This would suggest that expenditure by red meat processors on these industries is primarily outside their local region.

8.2 Queensland Regions

The contribution of the red meat processing industry to four regions in Queensland is summarised below.

Measure	Economic impact		
	Value (incl. flow-on impacts)	**Contribution to the regional economy**	**Top 5 industries impacted (FTE employment)**
Brisbane South & Logan-Beaudesert (combined)			
Industry value added ($m)	431.6	1.5%	Transport, postal & warehousing
Household income ($m)	159.0	1.1%	Retail trade
Employment (FTE)	2,090	1.0%	Other services
			Health care & social assistance
			Accommodation & food services
Fitzroy			
Industry value added ($m)	648.8	4.7%	Agriculture, forestry & fishing
Household income ($m)	247.3	3.3%	Transport, postal & warehousing
Employment (FTE)	3,683	4.2%	Electricity, gas, water & waste services
			Retail trade
			Accommodation & food services
Ipswich & Moreton Bay North (combined)			
Industry value added ($m)	757.8	3.8%	Agriculture, forestry & fishing
Household income ($m)	337.7	3.6%	Health care & social assistance
Employment (FTE)	5,192	3.8%	Retail trade
			Other services
			Transport, postal & warehousing
Toowoomba & Darling Downs-Maranoa (combined)			
Industry value added ($m)	674.7	4.8%	Agriculture, forestry & fishing
Household income ($m)	283.8	4.2%	Retail trade
Employment (FTE)	5,138	4.9%	Health care & social assistance
			Transport, postal & warehousing
			Accommodation & food services

Measure	Economic impact		
	Value (incl. flow-on impacts)	Contribution to the regional economy	Top 5 industries impacted (FTE employment)
Queensland			
Industry value added ($m)	8,255.8	2.9%	Agriculture, forestry & fishing
Household income ($m)	3,119.9	2.1%	Transport, postal & warehousing
Employment (FTE)	48,659	2.5%	Retail trade
			Professional, scientific & technical services
			Health care & social assistance

Table 17 - Economic impact, including flow-on effects, red meat processing, regional Queensland, 14-15

The overall impact measured in terms of full-time equivalent employment is significantly higher in three of the regions examined than for the State as a whole. The region of Brisbane South & Logan-Beaudesert (combined) exhibits results lower than the Queensland average for all three economic measures. However, it should be remembered that the main area of expenditure amongst red meat processors is on livestock, of which there is very little available locally in that region. Consequently flow-on impacts derived from expenditure on livestock are more likely to be experienced in other regions in the State.

8.3 South Australia Region

The contribution of the red meat processing industry to one region in South Australia is summarised below.

Measure	Economic impact		
	Value (incl. flow-on impacts)	Contribution to the regional economy	Top 5 industries impacted (FTE employment)
South Australia - South East			
Industry value added ($m)	292.6	3.7%	Agriculture, forestry & fishing
Household income ($m)	123.5	3.5%	Other food & beverage manufacturing
Employment (FTE)	2,439	3.9%	Retail trade
			Accommodation & food services
			Transport, postal & warehousing
South Australia			
Industry value added ($m)	2,212.1	2.4%	Agriculture, forestry & fishing
Household income ($m)	851.6	1.8%	Transport, postal & warehousing
Employment (FTE)	14,466	2.2%	Retail trade
			Wholesale trade
			Professional, scientific & technical services

Table 18 - Economic impact, including flow-on effects, red meat processing, regional South Australia, 14-15

The economic impact of the red meat processing sector on the region examined in South Australia is again significantly higher than for the State as a whole.

8.4 Victoria Regions

The contribution of the red meat processing industry to one region in Victoria is summarised below.

Measure	Economic impact		
	Value (incl. flow-on impacts)	Contribution to the regional economy	Top 5 industries impacted (FTE employment)
Hume & Shepparton (combined)			
Industry value added ($m)	216.0	1.5%	Agriculture, forestry & fishing
Household income ($m)	101.4	1.4%	Accommodation & food services
Employment (FTE)	1,796.8	1.5%	Retail trade
			Other food & beverage manufacturing
			Health care & social assistance
Melbourne West & Warrnambool and South West (combined)			
Industry value added ($m)	355.0	1.1%	Agriculture, forestry & fishing
Household income ($m)	163.0	1.0%	Other food & beverage manufacturing
Employment (FTE)	2,624.0	1.1%	Retail trade
			Other services
			Transport, postal & warehousing
Victoria			
Industry value added ($m)	3,735.8	1.1%	Agriculture, forestry & fishing
Household income ($m)	1,645.5	0.9%	Professional, scientific & technical services
Employment (FTE)	25,148.9	1.0%	Retail trade
			Transport, postal & warehousing
			Wholesale trade

Table 19 - Economic impact, including flow-on effects, red meat processing, regional Victoria, 14-15

9.0 APPENDIX 2 – ECONOMIC IMPACT METHODOLOGY

9.1 Construction of Base Tables

The base table for Australia was derived from the latest national input output table, updated to 2014-15 using a range of more recent statistics including National Accounts and data from the labour force survey. The latest national input output table is for 2012-13.

State and regional tables were constructed using Generation of Regional Input Output Tables (GRIT) files incorporated in the IO9 software used for this analysis. The GRIT technique, developed by Professors West and Jensen of the University of Queensland, uses allocation methods and location quotients as well as superior data. It is the most widely used method of constructing input output tables in Australia. It is also commonly employed in Europe and America. The construction of the State and regional tables incorporated a range of data derived from the State Accounts, Census, labour force survey, population statistics, Australian Taxation Office, Department of Employment and other information available at the local level. The resultant tables were compared with the relevant state table as a validity check.

The regional tables were constructed for Australian Bureau of Statistics defined statistical regions (SA4 level) rather than for individual Local Government Areas where red meat processing facilities are located. The reasons for this are twofold.

Firstly, it permits aggregation of data from a number of processing facilities which assists in overcoming issues associated with confidentiality of data. Secondly, expenditure by individual facilities is likely to be made in a wider area than the immediate Local Government Area, particularly that associated with the purchase of livestock. The economic contribution of a red meat processing plant, measured as a percentage contribution to the regional economy, is larger using a smaller geographical unit. However, when the economic contribution is measured in absolute terms, a bigger impact is obtained using a larger geographical unit.

Final decisions on the regions to be examined were made after consultation with AMPC and receipt of expressions of interest from processors to participate in the project. The distribution of the latter, along with issues relating to the protection of confidentiality of data, means that there are some variations in regions when compared with those indicated in the Milestone 2 Report for this Project.

9.2 Estimating the Regional Impact

A questionnaire was developed in Microsoft Excel, designed to gather information from processing plants relating to on-going operational expenditure; employment measured as full-time equivalent employees; income; and one-off capital expenditure, all assessed for 2014-15 (or the closest equivalent financial year for processors not utilising a year end June financial year).

Key factors to note about the data collection include:

- The categories incorporated in the section designed to capture information were based on accounting classifications generally understood by the industry. These do not necessarily conform to the classifications utilised in the input output tables but were used to simplify data collection at the plant level. The data was then converted by the Consultants to reflect the relevant input output categories.

- The expenditure data was collected in total for each category. However, the individual responsible for supplying the data was asked to estimate the proportion spent within the relevant region, the proportion spent elsewhere in the relevant State and the proportion spent elsewhere. Measuring the regional impact of an individual processing plant only incorporates that expenditure made within the region, with all other expenditure being treated as an import to the region. Similarly, income derived from sales made outside the region are treated as exports, irrespective of whether this income is derived from domestic sales or from overseas.

After assessing the expenditure made within the region and converting it to the classifications used in the input output tables, the data was then converted to Basic prices. Expenditure data provided by processing plants is measured in Purchasers prices i.e. what the processor actually pays. Conversion to Basic prices involves the reallocation of various margins to reflect what the supplier actually receives and by convention, is the measure used in input output tables.

The resultant aggregate data was then applied to the relevant regional table. This involved inserting a new row and column into the input output table to reflect the red meat processing sector. This was then subtracted from the relevant parent sector, in this case food & beverage manufacturing, to maintain the integrity of the table, and ensure that there is no double-counting. The tables were then rebalanced and the various measures of economic activity calculated, namely employment (measured as full-time equivalent positions), household income and gross regional product. It should be noted that in calculating the economic impact on each region, marginal rather than average income coefficients were used.

Conventional input output models are subject to some queries regarding linearity assumptions as a result of the adoption of average coefficients. Economic impact analysis using multipliers assumes that households consume goods and services in exact proportions to their initial budget shares. However, the household budget share of some goods might increase as household income increases, whilst others remain unchanged. This equally applies to industrial consumption of intermediate inputs and factors of production.

As has been well documented, the household sector is the dominant component of multiplier effects in a regional input output model, as consumer driven consumption and income tends to dominate local economic activity. Capturing marginal income and expenditure relationships for the household sector provides a more realistic representation of the economic system and removes the strict linearity assumption. In addition, as marginal income changes alter value added relationships by industry, effects on regional output prices as well as import proportions can also be simulated.

The analysis undertaken in this project incorporated empirically derived marginal, rather than average, coefficients providing a more realistic representation of the economy and removing the strict linearity assumption. The results are therefore more conservative and reasonable than those derived from conventional input output modelling.

9.3 Estimating the State and National Impact

In assessing the impact on the economies of the relevant State and Australia as a whole, data on the number of stock slaughtered in 2014-15 was analysed. The weighted average of data supplied by individual red meat processing plants and that derived from previously held data (updated to 2014-15) was utilised to estimate overall expenditure by category, total employment and associated wages

and salaries. It should be noted that data used in this analysis was derived for 29 red meat processing facilities. In collecting primary data in this Project, a number of plants provided complete data for 2014-15 whilst others provided only partial data. For those that only provided partial data (primarily impacted by time and other constraints), the State and national data were updated using data previously held by the Consultants and applying changes experienced over the time period by those that provided a full set of data was updated to 2014-15.

9.4 Interpretation of Results

The measurements provided in this report incorporate flow-on or multiplier effects which include not only the direct impact of the red meat processing sector but also the economic indicators across the remainder of the economy that are underpinned or supported by the sector. These will vary depending upon the structure of the regional economy as well as the degree of expenditure in the individual sectors that is made locally. For example, red meat processing facilities which purchase livestock primarily outside the region will have minimal flow-on impacts on the Agriculture, forestry & fishing sector in that region. At the same time, if a region has a significant proportion of the working population employed in, for example Health care & social assistance, the flow-on impacts will impact on that sector as a result of both indirect and induced impacts.

By convention, the impact of employment, wages & salaries and gross operating surplus is applied to the region in which the individual facility operates. Consequently that analysis does not differ at the State or national level. However, the individual regional impacts only reflect those facilities for which data was provided. As the ABS will not provide data on the number of livestock slaughtered at a regional level, for reasons of confidentiality, it is not possible to recalculate the potential regional impact incorporating other red meat processing facilities which may operate locally.

10.0 APPENDIX 3 – TEMPLATE FOR INDIVIDUAL FACILITY REPORTS

AMPC Project 2016-1031

Individual Facility Report for XXX

This report, assessing the economic impact of [facility] on its local region, has been funded by AMPC under Project 2016-1031. The report is based on data supplied by the facility and accordingly represents an analysis of that information. Should any data supplied be inaccurate, the Consultants are not able to warranty the results. Whilst the Project was funded by AMPC, this report is provided for the sole use by [facility] and AMPC is not privy to the contents of this individual report.

Introduction

[facility] provided information regarding income, expenditure (including capital expenditure) and employment for 2014-15 as part of the above-mentioned project. The expenditure data was allocated by the facility to that made within the local region, elsewhere in the State, in other States in Australia and overseas. In assessing the economic impact of the red meat processing facility, it should be noted that, by convention, the impact of any given operation measures the employment of full-time equivalent (FTE) staff by place of employment rather than by place of residence. Further summary details regarding the methodology used in developing the economic impact assessment are provided at the end of this report.

Local economic impacts

The local region utilised as the base measure for [facility] was [region], identified at the Statistical Area Level 4 as defined by the Australian Bureau of Statistics and defined on Sheet 1 (Instructions) of your questionnaire. The economic measures utilised incorporate flow-on or multiplier effects based on local expenditure. Expenditure made outside the immediate local region is treated as imports and therefore has no direct economic benefit locally but does impact on both the State and national economy.

Measures of the economic impact are expressed in $million values for industry value added and household income and in unit values for FTE employment. The contribution to the local economy, measured in percentage terms, for each are also provided.

Ongoing operational expenditure

The impact of [facility] on the economy of [region] is summarised in Table 1 below.

Measure	Economic impact	
	Value (incl. flow-on impacts)	Contribution to the regional economy
Industry value added ($m)		
Household income ($m)		
Employment (FTE)		

Table 20 - Economic impact of operational expenditure (incl. flow-on effects), 2014-15

[facility] is estimated to contribute X percent of the region's gross industry value added and X percent of full-time equivalent (FTE) employment when flow-on effects are taken into account.

The top five industry sectors impacted by the operations of [facility] in terms FTE employment locally are:

- Industry sector 1;
- Industry sector 2;
- Industry sector 3;
- Industry sector 4; and
- Industry sector 5.

Capital expenditure

The local impact of capital expenditure in 2014-15 by [facility] is summarised in Table 2 below.

Measure	Economic impact	
	Value (incl. flow-on impacts)	Contribution to the regional economy
Industry value added ($m)		
Household income ($m)		
Employment (FTE)		

Table 21 - Economic impact of capital expenditure (incl. flow-on effects), 2014-15

Capital expenditure made by [facility] in the region in 2014-15 is estimated to contribute X in gross industry value added and an additional X FTE employment positions when flow-on effects are taken into account.

State economic impacts

A summary of the economic impact of both operational and capital expenditure in 2014-15 on {State} is provided in Table 3 below.

Measure	Economic impact	
	Value (incl. flow-on impacts)	Contribution to the State economy
Industry value added ($m)		
Household income ($m)		
Employment (FTE)		

Table 22 - Economic impact of all expenditure (incl. flow-on effects), {State}, 2014-15

[facility] is estimated to contribute X percent of the State's gross industry value added and X percent of full-time equivalent (FTE) employment when flow-on effects are taken into account.

The top five industry sectors impacted by the operations of [facility] in terms FTE employment locally are:

- Industry sector 1;
- Industry sector 2;
- Industry sector 3;
- Industry sector 4; and
- Industry sector 5.

Summary of methodology

The base input output tables used in this analysis were derived from the latest national input output table published by the Australian Bureau of Statistics (2012-13), updated to 2014-15 utilising a range of secondary data including the Labour Force Survey and National Accounts for that year.

Subsequently individual State and regional tables were created for 2014-15 incorporating data derived from the State Accounts, Census, labour force survey, population statistics, Australian Taxation Office, Department of Employment and other information available at the local level. The resultant tables were compared with the national and relevant State table as a validity check.

Information supplied by [facility] was reclassified to the relevant input output categories. That data was then converted to Basic prices. Expenditure data provided by processing plants is measured in Purchasers prices i.e. what the processor actually pays. Conversion to Basic prices involves the reallocation of various margins to reflect what the supplier actually receives and by convention, is the measure used in input output tables.

The resultant data was then applied to the relevant regional table. This involved inserting a new row and column into the input output table to reflect the operations of [facility] . This was then subtracted from the relevant parent sector, in this case food & beverage manufacturing, to maintain the integrity of the table, and ensure that there is no double-counting. The tables were then rebalanced and the various measures of economic activity calculated, namely employment (measured as full-time equivalent positions), household income and gross regional product. It should be noted that in calculating the economic impact on each region, marginal rather than average income coefficients were used.

Further details regarding the methodology can be supplied by the Consultants if required.