Measurement of economic impact of the Australian thoroughbred breeding industry

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Foreword

Australia has the second largest thoroughbred breeding industry in the world with 660 stud farms across the country, predominantly in NSW, VIC and QLD. These stud farms supply thoroughbred horses to both the domestic and overseas markets.

The thoroughbred breeding industry is worth more than $1.16 billion per annum to the Australian economy, and employs close to 8000 people, particularly in rural and regional areas. The Australian thoroughbred breeding industry is made up of a majority of breeders – 76% – that have just one or two mares, and more than half of all mares are owned by breeders with five or fewer horses. About 16,000 people are actively involved in the thoroughbred breeding industry as a participant, employee or hands-off investor.

This research supports sound industry planning by understanding the economic benefit of the thoroughbred breeding sector and developing a sound research methodology for industry assessment. It delivers market research to quantify the size and scope of the thoroughbred breeding industry and its direct financial contribution to the Australian economy. More than 66% of this impact occurs in NSW and specifically in the Hunter Valley region with more than $500 million of economic contribution.

The thoroughbred breeding sector provides the racing animals who compete in more than 2600 race meetings throughout Australia each year. Overall, 1681 horses were exported out of Australia, from mares with foals, yearlings and racehorses through to mature breeding stock. It is estimated 34% of thoroughbred horses are exported for racing purposes (as yearlings, two-year-olds and three-year-olds), with the largest export contribution generated by Hong Kong buyers. Approximately 79% of exports for the purposes of breeding are shipped to New Zealand with the majority being broodmares. The second largest and emerging market for bloodstock is China (6.8%).

The AgriFutures’™ Thoroughbred Horses Program is funded by statutory levies paid by industry participants and industry contributions from Thoroughbred Breeders Australia and Racing Australia. Levy and industry contributions are matched dollar for dollar by the Australian Government (up to 0.5% of the industry GVP). In 2016-17, an estimated 19,174 broodmares were covered by 563 stallions producing 13,062 live foals.

This report is an addition to AgriFutures Australia’s diverse range of more than 2000 research publications and it forms part of our AgriFutures’™ Thoroughbred Horses Program, which aims to enhance the profitability and sustainability of our levied industries.

Most of AgriFutures Australia’s publications are available for viewing, free downloading or purchasing online at www.agrifutures.com.au.

About the author

IER is a leading strategic consulting business specialising in the tourism, events and entertainment industries. For more than 20 years, IER has provided economic impact evaluations for both private and government clients.

In particular, IER has specialised in consulting on a variety of projects related to the thoroughbred racing and breeding industries in Australia and New Zealand during this time.

This study constitutes an economic impact evaluation of the thoroughbred breeding industry in Australia. It has been developed utilising the following source data:

• Current year registration data relating to participants and animals
• Breeding expenditure data captured during in-depth interviews with breeding participants
• Export data gathered through a variety of sources including breeding peak bodies, sales agents and transport companies
• Data provided by a sample of breeders via a direct survey tool.

An understanding of the intricate and sometimes complex flow of money in the racing and breeding industry underpins the assessment of the breeding sector. IER has recently prepared similar studies for:

• Australian thoroughbred racing industry
• New Zealand racing industry (three codes)
• WA racing industry (three codes)
• NSW racing industry (three codes)
• QLD racing industry (three codes)
• NT thoroughbred racing industry
• TAS racing industry (three codes)
• SA racing industry (three codes).

The economic modelling for this study was undertaken by Associate Professor Barry Burgan B Ec (Hons), FINSIA (Fellow); Associate Professor Burgan is a director of Economic Research Consultants Pty Ltd and has extensive experience in the area of economic and financial assessment and policy advice. He has a background in the public and private sectors, academia, and has worked on various projects in the area of economic policy, including in the area of economic modelling.

In particular, Associate Professor Burgan has extensive experience in the use of both computable general equilibrium and input-output models, regional economic development and cost/benefit analyses. He has undertaken a number of these studies and projects with the Sustainable Tourism Cooperative Research Centre.

Associate Professor Burgan has undertaken a significant range of studies on special events, with some specific examples:

• Size and Scope of the South Australian Racing Industry (2012)
• Economic and Social Impact Study of Harness Racing in Australia (2012)
• Analysis of Economic Impact (CIGE modelling exercise) of 2006 Commonwealth Games on the Victorian Economy (with KPMG, 2006)
• Pre-event Evaluation of Impacts of the Sydney Olympic Games on NSW (with KPMG)
• Size and Scope Study of the Victorian Racing Industry (2017)
• Annual Assessment of the Adelaide Fringe, WomAdelaide and Clipsal 500 (over the last five to 10 years)
• Size and Scope Study of Racing Industry in NSW
• Size and Scope of the New Zealand Racing Industry (2014).
This study aims to quantify the economic, employment and social contribution that the thoroughbred breeding industry generates in each State and Territory of Australia.

IER acknowledges the contribution of the following organisations and individuals:

• Racing Australia
• Australian Stud Book
• Thoroughbred Breeders Australia
• International Racehorse Transport
• William Inglis & Son Limited

Definitions

Direct Expenditure: Expenditure generated across the breeding sector, specifically in the following areas:

• Maintenance of breeding animals
• Production of foals
• Profits on yearling sales
• Not contribution from exports
• Stallion fees
• Expenditure generated at other industry events.

Direct value added: The amount of income included in the direct in-scope expenditure, and therefore the amount of wages and salaries plus gross operating surplus directly created in supplying these services and products, which is also equal to the direct in-scope expenditure less the purchases the provider of the goods and services makes in providing the goods and services.

Indirect (induced) value added: The value added activity generated to support the purchases made in providing the inputs to the providers of the direct services, along with the value added impact in providing households with goods and services as they spend their wages, and the trickle on effect of this spending.

Total value added: The sum of the direct value added plus the indirect (induced) impact which represents the total wage and salary income plus gross operating surplus generated directly in providing the goods and services involved in the direct in-scope expenditure and the wages and salaries generated as an extension. It therefore represents the contribution to gross state product resulting from the events and activities of the breeding industry in Australia.

Full time equivalent employment (FTE): A unit that indicates the workload of an employed person in a way that makes workloads or class loads comparable across various contexts. An FTE of 1.0 is equivalent to a full time worker (i.e. 38 hours), while an FTE of 0.5 signals half of a full workload (i.e. 19 hours).

Household income: Wages and salaries (before tax) earned from employment generated by the thoroughbred breeding industry.

Participants in breeding: The number of employees (full time, part time and casual), participants and volunteers directly involved in the breeding industry. Does not include down-the-line suppliers of goods and services.

Input-output modelling: Economic modelling used to determine the economic outputs within this study. It is an economy wide model, which shows the inter-linkages between industry sectors in the economy. Therefore, the change in economic circumstances (specifically a change in final demand), for one sector of the economy can be traced through to its effect on other sectors.
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Executive summary

This report provides an assessment of the size and scope of the thoroughbred breeding sector in Australia. It demonstrates the value-added economic impact, job creation and export impacts of the thoroughbred breeding sector on the Australian economy. Furthermore, it illustrates the social and community impacts of the breeding industry in terms of volunteerism, history, education and training and the environment.

The Hunter Valley, NSW is responsible for generating the highest economic impacts and job creation in the thoroughbred breeding sector. This is followed by Greater Sydney and Central Coast, NSW, Greater Melbourne, Victoria, South East Queensland and Brisbane, and Goulburn and North East Victoria.

In addition, the Hunter Valley is responsible for generating just over $500 million in total value-added economic impact and more than 3,350 direct and indirect FTE jobs. Overall, close to 6,250 mares were covered in the region producing 4,257 live foals.

Aims/objectives

- To provide an independent and reliable assessment of the size and scope of the thoroughbred breeding sector in Australia including participant, asset and customer information.
- To provide an estimation of the value added economic impact, job creation and export impacts of the thoroughbred breeding sector on the Australian economy, including analysis by state/territory (including a number of smaller key breeding regions throughout Australia).
- To highlight the number of horses by category – foals, broodmares and stallions and participants.
- To present the economic benefits information for distribution to Australian, state and local government authorities, the broader equine sector and racing industry, the media and other stakeholders, including sponsors, commercial partners and community organisations.
- To understand the export implication of the thoroughbred breeding sector and highlight the global importance of the industry and Australia’s standing in the international racing community.
- To profile people within the breeding sector (in particular studs and breeding farms) to understand the demographic make-up (i.e. gender, age, country of birth, lifecycle stage) as well as their roles in the breeding industry.
- To assess the social and community impacts of the breeding industry in terms of volunteerism, community building, family, history, education and training and the environment.

Methods used

- IER sourced data from desktop research, particularly in relation to previously published thoroughbred racing and breeding industry studies of a similar nature.
- Racing Australia provided data relating to horse and participant numbers.
- Thoroughbred Breeders Australia provided support and guidance on the collection and analysis of participant data as it related to this area of research.
- IER undertook more than 80 in-depth interviews with thoroughbred breeders to develop a detailed financial model of the costs associated with the breeding function at various levels of the lifecycle stage.
- More than 1,000 people with an involvement in breeding (both hands-on and hands-off) were surveyed to inform the profiling of participants in the industry.
- IRT, William Inglis & Son, Magic Millions and a range of international thoroughbred horse trainers and bloodstock agents were interviewed to inform the export analysis.
Results/key findings

- The thoroughbred breeding industry in Australia is responsible for generating more than $934 million in expenditure in Australia.
- Overall, the thoroughbred breeding industry in Australia generates more than $1.16 billion in value added impacts to the national economy. More than 65% of this impact occurred in NSW.
- The economic activity created by the thoroughbred breeding sector nationally is responsible for sustaining nearly 8,000 FTE jobs. The direct impact on employment, generated specifically by the activities of the breeding industry, sustains 3,289 FTE jobs each year.
- In total, there are nearly 18,000 individuals who participate in the breeding industry as a participant, employee or volunteer.
- In 2016-17, it is estimated that 19,174 broodmares were covered, producing 13,062 live foals (at a success rate of 68.1%).
- The research of breeding establishments found that more than 78% of those people involved in breeding are over the age of 50.
- Overall, 1,681 horses were exported out of Australia, from mares with foals, yearlings and racehorses through to mature breeding stock.
- It is estimated that 573 of the 1,681 (or 34%) thoroughbred horses exported in 2016-17 were for the purposes of breeding.
- It is estimated that the thoroughbred breeding industry in Australia is responsible for generating $121.2 million in exports of bloodstock for the purposes of racing.
Introduction

AgriFutures Australia commissioned IER to undertake this study into the size and scope of the thoroughbred breeding industry in Australia. In part, this study provides an update on the 2001 study.

Economic methodology

- A measure of the whole of the horse industry impact including all sectors and breeds (racing and otherwise).
- Undertaken more than 15 years ago – and improvements in data management and industry modelling have occurred over that time.

IER has undertaken a number of similar studies for thoroughbred racing jurisdictions in Australia and New Zealand and has, in that time, developed a robust methodology of collecting source data to underpin these types of assessments. This study is based on assessment of the thoroughbred breeding industry during the 2016-17 season.

Objectives

This study aims to quantify the economic, employment and social contribution that the thoroughbred breeding industry generates in each state and territory of Australia. The key focus of the study is to meet the following objectives:

01 To provide an independent and reliable assessment of the size and scope of the thoroughbred breeding sector in Australia including participant, asset and customer information.

02 To provide an estimation of the value added economic impact, job creation and export impacts of the thoroughbred breeding sector, on the Australian economy, including analysis by state/territory (including a number of smaller key breeding regions throughout Australia).

03 To highlight the number of horses by category – foals, broodmares and stallions and participants.

04 To present the economic benefits information for distribution to Australian, state and local government authorities, the broader equine sector and racing industry, the media and other stakeholders, including sponsors, commercial partners and community organisations.

05 To understand the export implication of the thoroughbred breeding sector and highlight the global importance of the industry and Australia’s standing in the international racing community.

06 To profile people within the breeding sector (in particular studs and breeding farms) to understand the demographic make-up (i.e. gender, age, country of birth, lifecycle stage) as well as their roles in the breeding industry.

07 To assess the social and community impacts of the breeding industry in terms of volunteerism, community building, family, history, education and training and the environment.
Methodology

In assessing the size and scope of the thoroughbred breeding industry, this study reports on a number of the traditional measures adopted by the breeding industry (such as foal crops, breeders and exports) as well as calculating a number of economic measures aimed at illustrating the industry’s contribution to the economy.

For the purpose of this study, the breeding industry is limited to activities related to thoroughbred breeding and does not include any other non-racing horse populations.

From an economic impact perspective, the aim is to measure the expenditure that is generated as a result of breeding activity and the way that it impacts on the various economies in which they operate. The data that underpins this study has been gathered from a number of sources and these are outlined below:

- IER sourced data from desk research, particularly in relation to previously published thoroughbred racing and breeding industry studies of a similar nature.
- Racing Australia provided data relating to horse and participant numbers.
- Thoroughbred Breeders Australia provided support and guidance on the collection and analysis of participant data as it related to this study.
- IER undertook more than 70 in-depth interviews with breeders to develop a detailed financial model of the costs associated with the breeding function at various stages of the life cycle.

More than 1,000 people with an involvement in breeding (both hands-on and hands-off) were surveyed to inform the profiling of participants in the industry.

- IRT, Inglis, Magic Millions and a range of international thoroughbred horse trainers and bloodstock agents were interviewed to inform the export analysis.

Economic methodology

Throughout the report, data has been presented at a state/territory and national level, in some states, further geographic segmentation was undertaken to specifically profile key breeding areas in their right. These geographic segments have been developed specifically for the purpose of this study but are underpinned by the Australian Bureau of Statistics (ABS) SAAS level of the Australian Statistical Geography Standard (ASGS) framework.

The development of an economic model for the thoroughbred breeding industry requires a strong understanding of the internal and external flow of finance. In this regard, the key is to identify final expenditures - ensuring not to count the same expenditures as they flow between internal industry transactions. In developing the economic model, the expenditure profile of the breeding sector was assessed based on the following key inputs:

- Animal related expenditure – the expenditure made by breeders in the care and breeding activities undertaken.
- Business related expenditure – the expenditure made by breeding establishments on operating their businesses.
- Event related expenditure – the expenditure made by breeders (on preparing their yearling for sale) and attending the sales events.

The assessment of animal related expenditure is based on developing an understanding of the costs at various stages of the breeding life cycle. This is undertaken within the following framework:

- Development of separate cost profiles related to the average cost of producing a yearling within four key categories:
  - Commercial Stud Farm – prepared for yearling sales
  - Commercial Stud Farm – not prepared for yearling sales
  - Private Farm – prepared for yearling sales
  - Private Farm – not prepared for yearling sales

- Determining the relative proportion of yearlings which are produced by a commercial stud farm or a private farm in each state/territory.

- Determining the proportion of yearlings which are sold through a yearling sale by commercial stud farm and private farm in each state/territory.

- Assessing breeding data pertaining to the number of broodmares, fertility rates and live foals by postcode which will allow extrapolation of the expenditures to determine a cost of production in each geographic region. Using the actual number of empty mares, mares in foal and foals (provided by Racing Australia) and applying the average cost of production by different region and type of operations, this is scaled up to an industry level to estimate overall expenditures.

- Determination of the gross stallion fees (aligned with postcodes) obtained throughout the breeding season by matching every mare with the corresponding stallion.

- Analysis of sales and export data is also used to determine the margins where yearlings yield more than the cost of production plus the stallion fee (thus representing the profit yield on yearling sales).

- It is important to note that cost profile of breeders may change year-to-year due to some thoroughbred breeding areas being impacted by climatic and industry economic conditions (i.e. drought, floods).

Overall, IER conducted 73 interviews of thoroughbred breeders across 29 LGA areas. In terms of commercial breeders, 33% were large scale breeders, 38% were of medium size and 29% were smaller scale breeding operations.

<table>
<thead>
<tr>
<th>State</th>
<th>Number of Interviews</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSW</td>
<td>19</td>
</tr>
<tr>
<td>VIC</td>
<td>18</td>
</tr>
<tr>
<td>SA</td>
<td>12</td>
</tr>
<tr>
<td>QLD</td>
<td>11</td>
</tr>
<tr>
<td>WA</td>
<td>8</td>
</tr>
<tr>
<td>TAS</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>73</td>
</tr>
</tbody>
</table>

Of the seventy-three interviews, 45 were conducted with commercial breeders and 28 with private breeding operations. Commercial breeders constitute those operations whose primary income is sourced from thoroughbred breeding activities e.g. thoroughbred studs (with or without stallions), broodmare farms etc. Private breeders primarily breed for themselves (including, family or friends) on their own property – sometimes in conjunction with other farming activities.

Overall, IER conducted 73 interviews of thoroughbred breeders across 29 LGA areas. In terms of commercial breeders, 33% were large scale breeders, 38% were of medium size and 29% were smaller scale breeding operations.

The modelling for this study uses an input-output framework to add to the underlying information that is collected on stud, participant and thoroughbred sales purchasers. This process is important as it translates these direct impacts into the impact by industry and on employment. The economic modelling methodology is broadly consistent with other studies undertaken by IER for both state and national governments. The input-output tables are based on underlying 2015/16 data and inflated to 2017.
Economic impacts

Direct spending generated by the breeding sector

In 2016-17, the thoroughbred breeding industry in Australia generated more than $934 million in direct expenditure. The calculation of direct expenditure is based on the final expenditures of the breeding industry, or put another way, the point at which the expenditure leaves the internal breeding industry and hits the broader economy.

<table>
<thead>
<tr>
<th>Source of final expenditure</th>
<th>Description</th>
<th>Value ($ million)</th>
<th>Proportion of final expenditure (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production of racing horses</td>
<td>The expenditure incurred by owners on the maintenance of broodmares and stallions, and the production of foals.</td>
<td>490.6</td>
<td>52.5</td>
</tr>
<tr>
<td>Stallion fees</td>
<td>Payments made to owners of stallions for the rights to breed with that stallion.</td>
<td>239.7</td>
<td>25.7</td>
</tr>
<tr>
<td>Profits on yearling sales</td>
<td>The sales amount minus the cost of production and commissions paid to sales agents.</td>
<td>157.0</td>
<td>16.8</td>
</tr>
<tr>
<td>Profit on exports</td>
<td>The export revenue generated from the sale of Australian bred/domiciled horses to overseas buyers.</td>
<td>34.1</td>
<td>3.6</td>
</tr>
<tr>
<td>Expenditure at other events</td>
<td>The expenditure by attendees at various open days and events held by the industry.</td>
<td>13.2</td>
<td>1.4</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>934.6</td>
<td>100.0</td>
</tr>
</tbody>
</table>

The expenditure model takes into consideration the following inputs in Table 1:

<table>
<thead>
<tr>
<th>Source of final expenditure</th>
<th>Description</th>
<th>Value ($ million)</th>
<th>Proportion of final expenditure (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horse feed</td>
<td>28%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Veterinary services</td>
<td>21%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Repairs and maintenance</td>
<td>15%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breeding equipment</td>
<td>10%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transport</td>
<td>9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Utilities/rates</td>
<td>8%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wages</td>
<td>6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction</td>
<td>4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Economic impacts (continued)

The development of an expenditure model of the breeding industry is challenging given the long-term nature of some transactions. For instance, the maintenance of breeding animals and the production of foals can be measured within a given year, however elements such as profits on exports can occur at various stages of the horse life cycle. This study attempts to build a profile of the economic impacts that the industry generated in the 2016-17 breeding season, however some inputs (such as profits on yearling sales) rely on using known transaction data (the sale) from the current period and inferring a maintenance cost (at today's dollars) in order to develop an understanding of the profit generated.

Generally, the level of economic activity will not always proportionally follow the final expenditures, as regional areas generally have higher import penetrations than metropolitan areas, i.e. the major expenditure is on product imported from the metropolitan area. As such, the model takes into consideration these leakages between regions.

When considering the value added contribution generated by the thoroughbred breeding sector, it is important to note that it is made up of:

- **Direct value added** ($435.2 million) – this represents the amount of income included in the direct in-scope expenditure. It is the amount of gross wages and salaries in the breeding industry and the direct provision of services to breeding activity, plus the gross operating surplus (profits, interest payment and direct taxes) directly created in supplying these services and products. This is also equal to the direct in-scope expenditure less the purchases that the provider of the goods and services makes in providing the goods and services, both supplied from within the region, as well as externally (i.e. imported).

- **Indirect (induced) value added** ($729.6 million) – this represents the value added activity (wages, salaries and gross operating surplus) generated to support the purchases made in providing the inputs to the providers of the direct services, along with the value added impact in providing households with goods and services as they spend their wages, and the trickle on effect of this.

The direct value added impacts are calculated using the ratios within each of the relevant ANZSIC Industry classification sectors identified within the input-output table. The calculation of the indirect (induced) effects, which are allocated to the industry in which the impact occurs, is undertaken by running an impact assessment, and tracing the whole of economy effect of the expenditure patterns linked to the thoroughbred breeding industry.

When the direct value added impacts are assessed by industry sector, the industry sectors which benefit most significantly from thoroughbred breeding activity are listed in Table 2:

<table>
<thead>
<tr>
<th>Industry</th>
<th>Direct value added impact ($ million)</th>
<th>Proportion of breeding industry impact (%)</th>
<th>Sources of impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture, forestry and fishing</td>
<td>110.9</td>
<td>25.5</td>
<td>Feed production</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Breeding land</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Animal care and maintenance</td>
</tr>
<tr>
<td>Professional and scientific services</td>
<td>90.7</td>
<td>20.8</td>
<td>Veterinary services</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Specialist breeding services</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Laboratory services</td>
</tr>
<tr>
<td>Property services</td>
<td>66.1</td>
<td>15.0</td>
<td>Machinery hire and equipment</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Marketing and business services</td>
</tr>
<tr>
<td>Read transport</td>
<td>39.0</td>
<td>9.0</td>
<td>Freight transport</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Floating</td>
</tr>
</tbody>
</table>

When all of the state/territory impacts are added together, the value added contribution generated by the breeding sector is $1.01 billion. This represents the extent to which each state/territory generates contributions to their states economy (Figure 1). However, there is also an additional contribution that the industry generates nationally, when allowing for feedback between states (or cross border transactions). When this is added, the impact rises to $1.16 billion which represents the overall contribution of the industry to the national economy (Table 3).
The thoroughbred breeding industry in Australia is responsible for generating an economic impact of more than $1.16 billion.
NSW generates the largest economic impact when compared to other states and territories. This is mainly driven by the size and scale of the breeding operations in the Hunter Valley – generating more than $0.5 billion in total valued added economic impact alone. The VIC thoroughbred breeding industry generates the second largest economic impact (close to 20% or nearly $195 million in economic contribution) followed by QLD (close to 10% or nearly $95 million in economic contribution). Although other states have smaller scale stud operations and comprise a higher ratio of private ‘hands-on’ breeders, the contribution to their individual state economies is significant and their breeding operations are vital in providing the racing stock for their individual jurisdictions.

Full time equivalent employment

The economic activity created by the thoroughbred breeding sector nationally is responsible for sustaining nearly 8,000 Full time equivalent (FTE) jobs (Table 4). The direct impact on employment, generated specifically by the activities of the breeding industry, sustains 3,289 FTE jobs each year. When the indirect impacts, generated by the flow-on of economic benefits to other industries are taken into account, the total employment impact rises to nearly 8,000 FTE positions.

The breeding sector, like the broader horse racing industry, relies on a large amount of part time and casual labour to meet the labour demand created. It is important to note that the FTE job creation does not necessarily directly follow direct spending within the national economy. This is because some regions have a higher need to import labour (due to supply side constraints) than others.

The national breeding industry’s FTE positions resulted in more than $558.6 million in wages and salaries for the FTE employment of people employed in the breeding industry as well as those employed in other ‘down-the-line industries’. ‘Down-the-line industries FTE has increased as a result of industry generated demand. Some examples of the other industries that are stimulated by the breeding sector include veterinary, feed, retail, tourism, accommodation, transport and business services.

The thoroughbred breeding industry in Australia is now a worldwide leader, only second in size to the USA. The industry is focused across the east – QLD, NSW, VIC, TAS and the southern regions of SA and WA. The Hunter Valley, NSW is a hub of breeding activity, its farms producing almost half of the thoroughbreds born in Australia each year. Horses are exported to most racing nations in the world, particularly South-East Asia.

### Table 4 Distribution of employment in the Australian thoroughbred breeding industry by state and territory

<table>
<thead>
<tr>
<th>Region</th>
<th>Direct jobs (FTE)</th>
<th>Indirect jobs (FTE)</th>
<th>Total jobs (FTE)</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACT</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>NSW</td>
<td>2,013</td>
<td>2,373</td>
<td>4,386</td>
<td>63.7</td>
</tr>
<tr>
<td>Hunter Valley</td>
<td>1,808</td>
<td>1,550</td>
<td>3,358</td>
<td></td>
</tr>
<tr>
<td>Greater Sydney and Central Coast</td>
<td>59</td>
<td>714</td>
<td>773</td>
<td></td>
</tr>
<tr>
<td>Southern Highlands and South Coast</td>
<td>54</td>
<td>46</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>North Coast and New England</td>
<td>34</td>
<td>25</td>
<td>59</td>
<td></td>
</tr>
<tr>
<td>Riverina and Murray</td>
<td>29</td>
<td>21</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Central and Far West</td>
<td>28</td>
<td>18</td>
<td>46</td>
<td></td>
</tr>
<tr>
<td>VIC</td>
<td>625</td>
<td>794</td>
<td>1,419</td>
<td>20.6</td>
</tr>
<tr>
<td>Goulburn and North East</td>
<td>275</td>
<td>139</td>
<td>413</td>
<td></td>
</tr>
<tr>
<td>Greater Melbourne</td>
<td>149</td>
<td>552</td>
<td>701</td>
<td></td>
</tr>
<tr>
<td>North West and Macedon</td>
<td>127</td>
<td>64</td>
<td>181</td>
<td></td>
</tr>
<tr>
<td>Barwon and South West</td>
<td>55</td>
<td>30</td>
<td>85</td>
<td></td>
</tr>
<tr>
<td>LaTrobe Gippsland</td>
<td>19</td>
<td>10</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>QLD</td>
<td>309</td>
<td>340</td>
<td>650</td>
<td>9.4</td>
</tr>
<tr>
<td>South East and Brisbane</td>
<td>295</td>
<td>328</td>
<td>623</td>
<td></td>
</tr>
<tr>
<td>Central Coast</td>
<td>12</td>
<td>10</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>Outback and Top End</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>WA</td>
<td>127</td>
<td>104</td>
<td>232</td>
<td>3.4</td>
</tr>
<tr>
<td>SA</td>
<td>76</td>
<td>71</td>
<td>147</td>
<td>2.1</td>
</tr>
<tr>
<td>TAS</td>
<td>27</td>
<td>20</td>
<td>47</td>
<td>0.7</td>
</tr>
<tr>
<td>NT</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Sum of individual states</td>
<td>3,177</td>
<td>3,703</td>
<td>6,881</td>
<td>100.0</td>
</tr>
<tr>
<td>Total national impact</td>
<td>3,289</td>
<td>4,647</td>
<td>7,936</td>
<td></td>
</tr>
</tbody>
</table>
Participants in the breeding industry

The concept of 'participation in the breeding sector' is broader than simply considering those employed in the industry. Participants include breeders (hands-on and hands-off), employees and volunteers who are involved in varying levels of engagement from occasional to full time.

It is particularly important to distinguish between the concepts of 'hands-on' and 'hands-off' breeding involvement. The distinction is outlined below:

- **Hands-off** – those individuals who own thoroughbreds for the purposes of breeding (or shares in thoroughbreds for such purpose) but are not involved in the day to day care or supervision of the horses. In other words, they are investors in the breeding sector, but not involved in the breeding activities in a hands-on manner. Typically, these participants would own (entirely or a share in) broodmares or stallions.

- **Hands-on** – those individuals who own thoroughbreds for the purposes of breeding (or shares in thoroughbreds for such purpose) and are involved in the day to day care or supervision of the horses and those individuals who are employed, or volunteer their services, in the activities related to animal husbandry.

Overall, there are 6,772 individual breeders who are involved in breeding thoroughbreds nationally (Table 5). These individuals all have full or part ownership in one or more broodmares/foals however some have a hands-on involvement in the breeding function whilst others are involved only as owner/funders of breeding activity (hands-off).

In addition to these participants, there are more than 5,300 individuals who are employed directly within the breeding industry in a full time, part-time or casual role. The majority of these employees work at either a stud or broodmare farm.

Finally, there are approximately 5,860 individuals who volunteer their time and skills in a variety of roles within the breeding industry. In total, there are nearly 18,000 individuals who participate in the breeding industry as a participant, employee or volunteer.

Breeding animals

The thoroughbred breeding sector provides and replenishes the racing animals who compete in thoroughbred racing throughout Australia. Additionally, Australia is a strong exporter of thoroughbred racehorses, yearlings and breeding stock.

From a production perspective, at the top end of the breeding sector, large stud farms employ many staff and produce large numbers of foals each year. They operate as service providers for those with an ownership interest in a broodmare or stallion and provide the facilities, experience and expertise to breed with these animals. At the other end of the scale, there are a large number of hobby breeders also producing foals, both for sale and for racing purposes.

Breeders derive the majority of their income from the public and private sale of their stock. This particular sector of the industry has great potential to generate economic impacts, as breeders often sell their stock to interstate and overseas buyers, at sales events. This process leads to significant opportunities for foreign investment to flow into Australia as breeders sell their yearlings, two-year-olds and three-year-olds to foreign interests. The opposite is also true as owners often invest money outside Australia in the purchase of foreign bred racehorses. The relative strength of the breeding sector in Australia can dictate whether the nation is generating a net surplus or deficit from the sale of racing stock. Additionally, the ability for a jurisdiction to entice a standing stallion to remain can have a significant impact for that jurisdiction with value being derived from the broodmare population (both local and those who travel) to be served by those stallions.

In 2016-17, it is estimated that 19,174 broodmares were covered, producing 13,062 live foals (at a success rate of 68.1%). In addition to this, it is estimated that about 15% of broodmares are not bred within any given year. NSW (47%) and VIC (24%) domiciled broodmares accounted for nearly three-quarters of the foal crop in that year (Table 6).

Table 5 Number of people engaged in the thoroughbred breeding industry

<table>
<thead>
<tr>
<th>Region</th>
<th>Breeders</th>
<th>Full /part time/ casual employees</th>
<th>Volunteers</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSW</td>
<td>2,164</td>
<td>2,573</td>
<td>1,991</td>
<td>6,728</td>
</tr>
<tr>
<td>VIC</td>
<td>2,054</td>
<td>1,444</td>
<td>1,623</td>
<td>5,121</td>
</tr>
<tr>
<td>QLD</td>
<td>1,263</td>
<td>755</td>
<td>1,010</td>
<td>3,028</td>
</tr>
<tr>
<td>SA</td>
<td>377</td>
<td>192</td>
<td>628</td>
<td>1,097</td>
</tr>
<tr>
<td>TAS</td>
<td>172</td>
<td>77</td>
<td>224</td>
<td>472</td>
</tr>
<tr>
<td>WA</td>
<td>629</td>
<td>291</td>
<td>484</td>
<td>1,404</td>
</tr>
<tr>
<td>ACT</td>
<td>79</td>
<td>0</td>
<td>0</td>
<td>79</td>
</tr>
<tr>
<td>NT</td>
<td>34</td>
<td>0</td>
<td>0</td>
<td>34</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>6,772</strong></td>
<td><strong>5,332</strong></td>
<td><strong>5,860</strong></td>
<td><strong>17,964</strong></td>
</tr>
</tbody>
</table>

It is important to also note that not all broodmares, that are covered in a given year, are kept and foaled down in that location. This is particularly true in some of the larger breeding regions such as the Hunter Valley, NSW and the Goulburn and north east VIC where broodmares often travel to a standing stallion, are covered and then leave that jurisdiction and return to where they are normally domiciled. This has been taken into consideration in the development of this model, as it means that the expenditure profile, over the duration of the pregnancy, does not always occur in the location where the covering took place.

When assessing the cost of production (not including the stallions fees), the average expenditures vary depending on three key factors:

- The type of breeding farm (commercial or private farm).
- If the horse if being prepared for a yearling sale.
- The breeding region of assessment.

The range of averages applied to the different breeding scenarios as outlined above can be seen in the following table. Please note – averages for each region/state fall between the ‘lower average’ and ‘higher average’ within each category.
There are more than 13,000 live foals produced in Australia. NSW (47%) and VIC (24%) are responsible for more than 70% of the live foals.
Profile of industry participants

Nationally, there are nearly 18,000 people who are actively involved in the thoroughbred breeding industry as a participant, employee or hands-off investor. At an individual level, participants provide the breeding skills to produce much of the racing stock which sustains thoroughbred racing activity. Additionally, there are a number of larger scale breeding establishments (stud farms) which provide these services and provide significant employment opportunities. The hands-off investors provide the funding (either solely or through syndicates) to fund the breeding function through the ownership and care of broodmares, stallions and foals.

The breeding sector plays a crucial role in the thoroughbred racing industry around Australia. It is the source of much of the racing stock (with the exception of imported racehorses) that underpins the more than 2,600 race meetings that are held across the racing season. A strong breeding industry also has the potential to generate significant economic benefits to the national and state/territory economies through export income. Australian owned standing and shuttle stallions are held in high regard and have the ability to generate considerable export revenues.

Demographic and life cycle profile

Overall, across the Australian thoroughbred breeding industry, males make up the majority of those involved in the breeding sector. It is worth noting that females who are involved in the thoroughbred breeding industry are twice as likely to be in hands-on roles than hands-off roles (Figure 3).

Gender of breeding industry participants

The age profile of breeding industry participants also shows a significantly older skew. Overall, less than 7% of those involved in the breeding industry are under the age of 40 years. Conversely, nearly 53% are aged over 60 years and when adding in the 50-59 age group, it means that more than 78% of those involved in breeding are over the age of 50 (Figure 4).

The age profile of breeding industry participants also shows a significantly older skew. Overall, less than 7% of those involved in the breeding industry are under the age of 40 years. Conversely, nearly 53% are aged over 60 years and when adding in the 50-59 age group, it means that more than 78% of those involved in breeding are over the age of 50 (Figure 4).

There is a significant difference in the age when initial involvement occurred when comparing hands-on and hands-off breeding industry participants. The average age of hands-on participants is 30.8 years – a result that is driven by the fact that 27.6% were under the age of 20 when they first became involved. More than 87% of these people identified a family/history (67%) or previous racehorse ownership (21%) as how they first became involved in thoroughbred breeding.

The hands-off participants revealed that their involvement in thoroughbred breeding tends to have been much later in their life, with the average age of hands-off participants being 39.5 years (Figure 6). Overall, more than 63% of the hands-off participants identified racehorse ownership as their ‘entrée’ into the breeding side of the industry, with an additional 23% identifying ‘family history/ involvement’ as how they became involved. Amongst the hands-on participants, more than 90% identified previous involvement with the horse industry (either through ownership, family history or previous horse background – not necessarily related to racing) as being the key driver to their initial interest in thoroughbred breeding (Figure 7).

Overall, more than half of all hands-on participants consider their involvement as being in a full time or part-time capacity whilst a further 43% consider their involvement as being a hobby (Figure 8).

Figure 3 Gender profile of participants in the Australian thoroughbred breeding industry

Figure 4 Age of participants in the Australian thoroughbred breeding industry

Figure 5 Type of industry involvement in the Australian Thoroughbred breeding industry

Figure 6 Age of initial involvement in the Australian thoroughbred breeding industry

Figure 7 Age of initial involvement in the Australian thoroughbred breeding industry

Figure 8 Type of industry involvement in the Australian thoroughbred breeding industry

Figure 9 Age of initial involvement in the Australian thoroughbred breeding industry
Drivers to participation

Thoroughbred breeding remains an industry that is heavily driven by passion and intrinsic interest. This is not to say that breeders do not seek a return on their investment, however it is not the major driver in motivating participation.

Participants, whether hands-on or hands-off are most motivated by their love of thoroughbreds. For those with a hands-off involvement, the chance to be involved in a champion thoroughbred racehorse is also a strong motivation ahead of the social aspects to do with their involvement.

Whilst hands-on participants identified more strongly with their involvement being their primary source of making a living, this motivation still remains at the lower end of the scale (Figure 9).

Changes in participation

When assessing the extent to which breeder involvement has changed over the last three years, the research suggests that those who have increased their involvement outweigh those who have decreased their involvement by two-to-one. Across both hands-on and hands-off attendees, more than 40% indicated that they have increased their involvement compared to 23% who have decreased their involvement (Figure 10).
Drivers to participation (continued)

Expected level of involvement compared to 2015

<table>
<thead>
<tr>
<th>Hands-on</th>
<th>Significantly decreased</th>
<th>Slightly decreased</th>
<th>Stayed about the same</th>
</tr>
</thead>
<tbody>
<tr>
<td>13.6%</td>
<td>10.9%</td>
<td>31.3%</td>
<td>22.7%</td>
</tr>
<tr>
<td>Hands-off</td>
<td></td>
<td></td>
<td>26.1%</td>
</tr>
<tr>
<td>13.5%</td>
<td></td>
<td>10.3%</td>
<td>29.8%</td>
</tr>
</tbody>
</table>

Looking forwards, the largest proportion of breeders suggested that they were likely to maintain a similar level of involvement in thoroughbred breeding. Slightly more breeders are likely to increase their involvement in breeding over the period 2018 and 2021 (Figure 11).

Expected level of involvement over the period 2018-21

<table>
<thead>
<tr>
<th>Hands-on</th>
<th>Significantly decreased</th>
<th>Slightly decreased</th>
<th>Stayed about the same</th>
</tr>
</thead>
<tbody>
<tr>
<td>13.9%</td>
<td></td>
<td>12.8%</td>
<td>45.4%</td>
</tr>
<tr>
<td>Hands-off</td>
<td></td>
<td></td>
<td>18.4%</td>
</tr>
<tr>
<td>10.3%</td>
<td></td>
<td>14.5%</td>
<td>48.0%</td>
</tr>
</tbody>
</table>

However, when the past behaviour and future intention are combined, it shows that across all breeders, the 26% who have either significantly or slightly decreased their involvement over the three year period 2015-18 expect to continue to scale back over the three year period 2018-21. The 30% who have been stable, as well as the 24% who have slightly increased over the three year period 2015-18 expect to retain a similar level of involvement. The 21% of breeders who said that they had significantly increased their involvement between 2015-18, expected to continue to grow their involvement in the breeding industry (Figure 12).

Expected level of involvement over the period 2018-21

<table>
<thead>
<tr>
<th>Likely to decrease</th>
<th>Likely to stay the same</th>
<th>Likely to increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Significantly decreased</td>
<td>Slightly decreased</td>
<td>Stayed about the same</td>
</tr>
<tr>
<td>15%</td>
<td>30%</td>
<td>24%</td>
</tr>
<tr>
<td>11%</td>
<td>21%</td>
<td>21%</td>
</tr>
</tbody>
</table>

It is interesting to note that only around 50% of the current breeding participants indicate that they proactively encourage new people to get involved in the breeding industry.

Associated breeding events

The thoroughbred breeding industry showcases its bloodstock at ‘open days’ leading into the breeding season. Many of these are stallion parades, where existing and potential clients are invited to learn more about the stud farm and the opportunities that come with breeding their horses with specific stallions. In addition to this, major bloodstock auctions are held throughout Australia, mainly by William Inglis & Son and Magic Millions, for the sale of yearlings, weanlings, unraced and raced horses and broodmares. These events (some with associated major racing events) generate expenditure by visitors to the region.

In assessing their economic contribution, IER has only considered the expenditure made by visitors attending these associated breeding events (excluding personnel associated with stud farms and sales organisations). Furthermore, IER does not account for expenditures associated with the cost of hosting open days by studs, as these costs are covered in their operating expenditures which is funded by revenue. Overall, the expenditure associated with breeding events amounts to $13.2 million.

Major sales auctions generate significant economic impacts for their regions and states in which they reside. This report does not break out their impacts as the majority of the impacts generated by sales events is captured within the cost of production, the profit on yearling sales and export sections of this report.
The thoroughbred breeding industry in Australia is responsible for generating over $121 million in exports of bloodstock for the purposes of racing. Hong Kong ($56.8 million) accounts for 47% of this export value, followed by Singapore (19% or $23.3 million), New Zealand (13% or $15.3 million) and South Africa (8% or $10.2 million). It is important to note that this study does not attempt to value the exports of bloodstock for the purposes of breeding (Figure 13).

The thoroughbred breeding industry in Australia is responsible for generating over $121 million in exports of bloodstock for the purposes of racing.
Exports (continued)

The purpose of this study is to measure the contribution made by the thoroughbred breeding industry in each state and territory economy as well as the national economy. In this way, it is a generalised measure of the industry’s contribution to each economy.

Economic contribution

The economic contribution of an industry refers to the contribution that the industry makes in terms of:

- Gross state or regional product
- Household income
- The employment that these income measures support. Industries do this in two ways:
  1. By the employment and activity it supports directly (and in the industries that depend on it as a customer)
  2. The flow on effects which filters through the economy.

The importance of the expenditures generated by an industry in the production process is that they will sustain turnover in local industry, and specifically this will support local jobs and incomes. It is the jobs and incomes that are taken to be the measure of economic impact or benefit (after netting out leaked expenditure on items such as imports). It is also generally acknowledged that, in addition to the jobs in direct suppliers of services to the production processes of the industry, the production expenditure also has a multiplier effect within the community.

In this way, the direct expenditure impact of the breeding industry generates a ‘flow on impact’ on other sectors through the expenditure of wages and purchases of the direct suppliers to the industry.

The use of multipliers, derived from input-output tables, has been a prominent process for translating directly created expenditure (a final demand stimulus) of industries or projects into jobs and incomes. The multipliers allow for the measurement of the extent of the flow-on impact generated in the economy, as a result of the breeding industry expenditure. There has been some level of academic argument about appropriate models for converting increases in external expenditure (final demand) into regional economic impacts. The critics of using input-output tables often argue that multipliers are used to overstate the value of an industry – with the term multiplier taken as ratcheting up the value (or overstating the impact). This criticism used to be valid when analysts applied turnover multipliers but is not the case with the more appropriate use of value added multipliers, which translate the expenditure estimates to a national accounting framework measure with a whole of economy context.

Indeed, value added multipliers (the value added impact (direct and induced) relative to a dollar of created expenditure) are often less than one. Used correctly multipliers provide a more appropriate measure. In short, the use of these input-output based multipliers allows for reporting of the estimated outcomes of that industry in terms of:

- The effect of expenditure or turnover on value added across a regional economy
- Its impact on the labour market in terms of job creation.

These measures are consistent with national accounting frameworks. It should be emphasised that this methodology, firstly of identifying the local expenditure associated with production by the industry and secondly, tracing the expenditure through the rest of the economy cannot be interpreted as saying that gross state/territory/national product or employment would fall by this amount if the industry somehow ceased to exist. Economically, it is held that in a situation like this, there would be a level of transference of spending to other sectors of the economy which may in fact replace most or all of that which was previously generated by the breeding industry. However, practically, the breeding industry is a sector that provides a specialised service which underpins the racing industry and as such this viewpoint may not hold entirely. It is quite likely that in the case of a decline or cessation of the breeding industry in a jurisdiction, there may actually be a transfer of breeding industry activity and expenditure to another jurisdiction therefore leading to a negative economic outcome for that jurisdiction (from which the activity has left).
Results (continued)

What this study calculates is the level of direct and induced employment and income that is linked to thoroughbred breeding activities in Australia (after allowing for imports which are used in the production process). This could be considered as being the gross economic impact of the sector and is therefore a measure of its significance generally. If a similar gross impact was calculated for every other sector of the economy, then the sum of the impacts would be considerably greater than the size of the economy in total.

An alternative methodology would be to measure the net economic impact – which is the extent to which this industry expenditure is supported by revenues that can be considered new to the region of assessment. This would include the supply of services by the local industry to breeding activities interstate (i.e. serving a visiting mare from another State).

However, this is acknowledged as being an extremely difficult exercise as it requires a series of assumptions that describe likely participant behaviour if their local industry was to decline or cease to exist.

Disclaimer

This report (Report) has been produced independently by IER as requested by AgriFutures Australia using a mixture of primary and secondary research data. The report has been prepared to meet the requirements set out by the study terms of reference. The information, statements, statistics and commentary (together the ‘Information’) contained in this report have been prepared by IER from a combination of data sourced from various bodies associated with the breeding and racing industries as well as from individuals engaged in the breeding industry. IER has prepared this Report on the information that was received or obtained, on the basis that such information is accurate and, where it is represented to IER as such, complete. Some of the Information contained in this Report has not been subject to an independent audit, however IER has utilised information in good faith and with its best judgment on its appropriateness and veracity.
New South Wales

New South Wales (NSW) has a population of 7,987,300 (ABS, 2018).

There is a total of 6,278 participants in the breeding industry in NSW – around 1,900 of whom are volunteers.

Just under 6,200 live foals were born in NSW.

The breeding industry in NSW is responsible for generating an economic contribution of $654.8 million.

This economic activity is responsible for directly sustaining 2,013 FTE jobs. When flow-on impacts are included, this rises to a total of 4,386 FTE jobs.

Around 6,278 individuals participate in the breeding industry in NSW. The industry is responsible for generating an economic contribution for the region of $654.8 million.

**Economic contribution ($654.8 million)**

**Horses**

Broodmares covered: 9,091

Live foals: 6,193

Stallions: 193

**Participants in breeding**

Breeders: 2,164

Breeders staff: 2,573

Volunteers: 1,991

**Economic contribution**

Direct: $276.1m

Indirect: $378.7m

Total: $654.8m

**FTE employment**

Direct: 2,013

Indirect: 2,373

Total: 4,386

**Breeding animals**

<table>
<thead>
<tr>
<th>Region</th>
<th>Broodmares covered</th>
<th>Live foals</th>
<th>Stallions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central &amp; Far West</td>
<td>427</td>
<td>801</td>
<td>117</td>
</tr>
<tr>
<td>Greater Sydney &amp; Central Coast</td>
<td>569</td>
<td>530</td>
<td>186</td>
</tr>
<tr>
<td>Hunter Valley</td>
<td>1,749</td>
<td>721</td>
<td>217</td>
</tr>
<tr>
<td>North Coast &amp; New England</td>
<td>365</td>
<td>491</td>
<td>116</td>
</tr>
<tr>
<td>Southern Highlands &amp; South Coast</td>
<td>413</td>
<td>378</td>
<td>103</td>
</tr>
<tr>
<td>Riverina &amp; Murray</td>
<td>2,013</td>
<td>247</td>
<td>20</td>
</tr>
</tbody>
</table>

**Profit on yearling sales**

- Central & Far West: $185.5m
- Greater Sydney & Central Coast: $125.4m
- Hunter Valley: $20.0m
- North Coast & New England: $1.4m
- Southern Highlands & South Coast: $14.97m
- Riverina & Murray: $7.33m
- Central & Far West: $6.77m
- Greater Sydney & Central Coast: $113.13m
- Hunter Valley: $14.97m
- North Coast & New England: $8.68m
- Southern Highlands & South Coast: $7.33m
- Riverina & Murray: $7.33m

**Total profit on exports (non yearling sales)**

- Hunter Valley: $503.91m
- Greater Sydney & Central Coast: $113.13m
- Hunter Valley: $14.97m
- North Coast & New England: $8.68m
- Southern Highlands & South Coast: $7.33m
- Riverina & Murray: $7.33m
- Central & Far West: $6.77m

**Profit on exports (non yearling sales)**

- Hunter Valley: $503.91m
- Greater Sydney & Central Coast: $113.13m
- Hunter Valley: $14.97m
- North Coast & New England: $8.68m
- Southern Highlands & South Coast: $7.33m
- Riverina & Murray: $7.33m
- Central & Far West: $6.77m

**Expenditure generated by the industry ($ million)**

- Central & Far West: $6.77m
- Greater Sydney & Central Coast: $113.13m
- Hunter Valley: $14.97m
- North Coast & New England: $8.68m
- Southern Highlands & South Coast: $7.33m
- Riverina & Murray: $7.33m

**Profits**

- Production of racing horses: $260.9m
- Stallion fees: $185.5m
- Profit on yearling sales: $125.4m
- Profit on exports (non yearling sales): $20.0m
- Expenditure at other events: $1.4m

**Total profits**

- Hunter Valley: $503.91m
- Greater Sydney & Central Coast: $113.13m
- Hunter Valley: $14.97m
- North Coast & New England: $8.68m
- Southern Highlands & South Coast: $7.33m
- Riverina & Murray: $7.33m
- Central & Far West: $6.77m

**FTE employment**

- Direct: 2,013
- Indirect: 2,373
- Total: 4,386
Victoria (VIC) has a population of 6,459,800 (ABS, 2018).

There are a total of 5,122 participants in the breeding industry in VIC – around 1,600 are volunteers.

Just under 3,200 live foals were born in VIC.

The breeding industry in VIC is responsible for generating an economic contribution of $193.3 million.

This economic activity is responsible for directly sustaining 625 FTE jobs. When flow-on impacts are included, this rises to a total of 1,419 FTE jobs.

Around 5,122 individuals participate in the breeding industry in VIC. The industry is responsible for generating an economic contribution for the region of $193.3m
At a glance

This economic activity is responsible for directly sustaining 2,013 FTE jobs. When flow-on impacts are included, this rises to a total of 4,386 FTE jobs. Queensland (QLD) has a population of 5,012,200 (ABS, 2018).

There is a total of 3,028 participants in the breeding industry in QLD – around 1,000 of whom are volunteers.

Just over 2,000 live foals were born in QLD.

The breeding industry in QLD is responsible for generating an economic contribution of $93.4 million.

This economic activity is responsible for directly sustaining 309 FTE jobs. When flow-on impacts are included, this rises to a total of 650 FTE.

Around 3,028 individuals participate in the breeding industry in QLD. The industry is responsible for generating an economic contribution for the region of $93.4m.

Participants in Breeding

- Breeders: 1,263
- Breeders staff: 755
- Volunteers: 1,010

Horses

- Broodmares covered: 2,977
- Live foals: 2,028
- Stallions: 133

Economic Contribution

- Direct: $44.0m
- Indirect: $49.4m

Total: $93.4m

FTE Employment

- Direct: 309
- Indirect: 340

Total: 650

Breeding animals

- Broodmares covered: 173, 38, 2,766, 2,977
- Live foals: 118, 26, 1,884, 2,028
- Stallions: 18, 7, 107, 133

Participants in the Industry

- Breeders: 167, 56, 1,040, 1,263
- Breeders staff: 89, 30, 636, 755
- Volunteers: 133, 45, 832, 1,010

Total: 389, 131, 2,508, 3,028

Economic contribution ($ million)

- Direct: $1.7, $0.4, $41.9, $44.0
- Induced: $1.6, $0.3, $47.5, $48.4

Total: $3.4, $0.7, $89.4, $93.4

FTE employment

- Direct: 12, 3, 295, 309
- Induced: 10, 2, 328, 340

Total: 22, 4, 623, 650

Production of racing horses

- Stallion fees: $1.7
- Profit on yearling sales: $10.9
- Profit on exports (non yearling sales): $2.6
- Expenditure at other events: $10.4

South East & Brisbane

- Economic contribution ($93.4 million)

- South East & Brisbane: $89.4m
- Central Coast: $3.4m
- Outback & Top End: $0.7m
South Australia (SA) has a population of 1,736,400 (ABS, 2018).

There is a total of 1,097 participants in the breeding industry in SA – around 530 of whom are volunteers.

Just over 470 live foals were born in SA.

The breeding industry in SA is responsible for generating an economic contribution of $19.8 million.

This economic activity is responsible for directly sustaining 76 FTE jobs. When flow-on impacts are included, this rises to a total of 147 FTE jobs.

Western Australia (WA) has a population of 2,595,900 (ABS, 2018).

There is a total of 1,403 participants in the breeding industry in WA – around 480 of whom are volunteers.

Just under 960 live foals were born in WA.

The breeding industry in WA is responsible for generating an economic contribution of $39.4 million.

This economic activity is responsible for directly sustaining 127 FTE jobs. When flow-on impacts are included, this rises to a total of 232 FTE jobs.

Around 1,403 individuals participate in the breeding industry in WA. The industry is responsible for generating an economic contribution for the region of $39.4m.

Around 1,097 individuals participate in the breeding industry in SA. The industry is responsible for generating an economic contribution for the region of $19.8m.
Appendices

Appendix 1: Magic Millions Race Day

The Magic Millions Race Day is one of Australia’s richest race days with more than $10 million in prizemoney on offer. In 2018, the race day attracted attendances in excess of 21,000 people. An economic impact assessment of the 2018 Magic Millions Race Day found that the event generated more than $10.7 million of direct in-scope expenditure for the QLD economy. The event was directly responsible for bringing 4,307 tourists to QLD – people who are unlikely to have otherwise visited.

In addition to the impacts associated with the race day, the bloodstock sales component of the event has great potential to generate economic impacts within the local economy.

The following table (Table 9) illustrates the key impacts to the state of QLD of the Magic Millions Race Day.

<table>
<thead>
<tr>
<th>Measure of benefit</th>
<th>In-scope visitors (spectators only)</th>
<th>$10.7m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tourism Impact</td>
<td>4,307</td>
<td></td>
</tr>
<tr>
<td>Visitor nights generated in QLD</td>
<td>20,023</td>
<td></td>
</tr>
</tbody>
</table>

Appendix 2: Riverside Stables in Sydney's West

The newly opened Inglis Riverside Stables at Warwick Farm in western Sydney has been 10 years in the making. A high-class precinct, it is set to attract thousands of visitors to its suite of carefully laid out and spacious accommodation – for humans and horses alike.

More than 800 stables have been constructed, using hardwood recycled from the Newmarket Stables at Randwick. One stable – the Big Barn – has been developed in a traditional style to cater for weddings and other special events. Parade space on rubberised bitumen and synthetic turf for horses is extensive, more than double the area per horse available at the previous venue.

Close to a large carpark incorporating float and truck ramps, ten hospitality suites can each accommodate 50 guests; available for industry personnel during horse sales. A range of transport options are accessible for vendors and buyers attending the horse sales, including a local shuttle bus.

A new luxury hotel is a key feature of the precinct – The William Inglis Hotel, named in honour of the renowned 1800s Australian bloodstock auctioneer. The equine-themed, 5-star hotel encompasses a celebration of thoroughbred racing history. Each of the 144 rooms has its own name and theme based on a champion racehorse sold via an Inglis sale ring. While the Inglis horse sales are running, the hotel is reserved for those in the industry; for the rest of the time other travellers are welcome to stay at the ‘iconic destination with a rural soul’.

Other facilities include a retail shop, outdoor pool, conference venues and fitness gym/spa and wellness centres. All-day dining is available at a paddock-to-plate style restaurant, cafe and lounge, and a pool deck bar with open views over the precinct and riverine surrounds (Figure 14).

## Tasmania

Tasmania (TAS) has a population of 528,100 (ABS, 2018).

There is a total of 440 participants in the breeding industry in TAS – around 220 are volunteers.

Just over 230 live foals were born in TAS.

The breeding industry in TAS is responsible for generating an economic contribution of $6.4 million.

This economic activity is responsible for directly sustaining 27 FTE jobs. When flow-on impacts are included, this rises to a total of 47 FTE jobs.

Tasmania (TAS) has a population of 528,100 (ABS, 2018).

<table>
<thead>
<tr>
<th>Participants in breeding</th>
<th>Horses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breeders</td>
<td>Broodmares covered</td>
</tr>
<tr>
<td>172</td>
<td>343</td>
</tr>
<tr>
<td>Breeders staff</td>
<td>Live foals</td>
</tr>
<tr>
<td>77</td>
<td>233</td>
</tr>
<tr>
<td>Volunteers</td>
<td>Stallions</td>
</tr>
<tr>
<td>224</td>
<td>17</td>
</tr>
</tbody>
</table>

### Economic contribution

<table>
<thead>
<tr>
<th>FTE employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct</td>
</tr>
<tr>
<td>$3.7m</td>
</tr>
<tr>
<td>27</td>
</tr>
</tbody>
</table>

### Expenditure generated by the industry ($ million)

<table>
<thead>
<tr>
<th>Production of racing horses</th>
<th>Stallion fees</th>
<th>Profit on yearling sales</th>
<th>Profit on Exports (non yearling sales)</th>
<th>Expenditure at other events</th>
</tr>
</thead>
<tbody>
<tr>
<td>$6.8</td>
<td>$0.5</td>
<td>$0.4</td>
<td>$0.0</td>
<td>$0.1</td>
</tr>
</tbody>
</table>
Appendix 3: Scone Racing Carnival –
A success story for the Hunter Valley

Australia’s richest country race meeting is the two-day Scone Racing Carnival, offering $2 million in prizemoney. Scone’s unique rural setting and metropolitan status for the weekend appeals to racegoers from all over. Held in early May, the Carnival places a spotlight on the upper Hunter Valley, whose main industry is thoroughbred horse breeding. Attention is also drawn to the Hunter’s high-quality ancillary support businesses – from vet practices and equine research organisations to auction houses and feed companies.

Close relationships between the Scone Race Club and breeders date back five decades and have strengthened considerably since early 2000s. The Carnival is only made possible with the significant financial support of the breeding industry. Unique race day signage, marketing and race names promoted via ongoing media coverage are associated with the event’s primary sponsors – Hunter breeders – further highlighting their international notoriety to punters and racegoers. The Carnival helps to bring key names of the breeding industry to the forefront, showing their brands and the role they play in generously giving back to the racing industry.

In the Carnival’s lead up and duration, stud visits help showcase the industry’s significant investment and value to the region. This offers breeders an opportunity to take a breather on their home soil following the yearling sales, and to impress their existing and potential clients.

A couple of days prior to the Carnival, the Hunter Thoroughbred Breeders Association (HTBA) holds its annual award nights; of which the Scone Race Club is a major sponsor. In partnership with the HTBA, the Club works to protect race industry land from coal mining development.

All in all, the ‘Who’s who’ of breeding and racing stakeholders from all over Australia support the Carnival at some stage, as it has become a destination event on the racing and social calendar, and of significance for the promotion of both industries.
Appendix 4: A traineeship to build a workforce

A national training program has been developed to create a pathway to help people enter the breeding industry. The Fast Track scheme was designed by Thoroughbred Breeders Australia (TBA) in response to the challenges of finding qualified staff to work on breeding farms. More than 120 people from across Australia applied for the first intake in July 2018, with 15 trainees chosen after a selection process that involved a series of interviews. The group began the program with an intensive three-week block of teaching at Hunter TAFE in Scone and were then given an apprentice level job at a leading stud farm. They returned to TAFE in November 2018 and are on the road to qualify for a Certificate 3 Level qualification in Horse Breeding within 12 months. “The course was designed to create a career pathway for those who already had a background with horses but maybe didn’t know that breeding could provide them with a job,” said Tom Reilly, chief executive of TBA. TBA is looking at opportunities to expand the course to include teaching at other TAFEs across the country.

“*The program is an important way to bring new people into breeding and give them the skills and the opportunity to thrive and build a career, which is critical to our success as an industry,*” said prominent breeder Arthur Mitchell, who is taking a trainee at his farm in the Hunter Valley. As well as formal learning on equine subjects, trainees are being tutored in areas to help their personal development. Among these broader learning opportunities are basic computer skills, understanding personal finance, first aid, safe driver training and maintaining a healthy lifestyle.

As well as organising the program and finding the trainees, TBA has supported Fast Track by meeting the tuition costs for the students at TAFE.

“We are committed to developing strategies to help the long term labour shortage and Fast Track has been a good start, but we’re determined to build on the program in the coming years and ensure we’re recruiting even more trainees,” added Mr Reilly. Other schemes run by the industry include the EquiStart Work Ready program that offers school students and young people who want to pursue a career in the industry. It is practically based and provides an insight into the diverse pathways that can be taken. It includes three weeks of coursework and a one-week work placement in the Hunter Valley. There is an emphasis on safety induction, and a high percentage of graduates go on to work in the thoroughbred breeding industry (some also enrolling in further education). Foundational skills include handling and caring for horses, observing their health and behaviour, hazards and safety, biosecurity issues, among others.

Figure 17  Industry trainees in the Hunter Valley, NSW
Source: Thoroughbred Breeders Association

Figure 16  Thoroughbred industry trainees participating in tuition
Source: Thoroughbred Breeders Association

Appendices (continued)