



Australian
Farm Institute

The Job Market in Agriculture in Australia

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Demand by employers in the agriculture sector has been variously estimated. However there has been no systematic comprehensive analysis of the job market based on actual advertisements. This paper addresses that deficiency.

Advertisements have been monitored over the years 2007 to 2009 inclusive on the Internet, in national newspapers, metropolitan daily newspapers and state agricultural papers. Some 50,600 advertisements were assessed and categorised into production (on-farm) and a range of occupations in agribusiness. Overlap of Internet and print advertisements was assessed by sub-sampling and figures adjusted accordingly.

Data show that the demand for employees in agriculture has been consistently around 15,000 per year, being in the ratio of 3:2 for production:agribusiness. The print media remains the main vehicle for production jobs (>85%) whereas the Internet is more important for the agribusiness positions (about 45%). There was a general growth, in the first two years of the study, in the use of the Internet for job advertisements, probably reflecting its lower cost and longer exposure time than is provided by newspaper advertisements. State agricultural newspapers contained around 88% of the newspaper component of the advertisement pool.

Analysis of the data suggests that the job market in agriculture has been substantially underestimated and previous estimates of the demand for graduates have been exceedingly low.

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Introduction

The role of agriculture in Australia is confused in the minds of the community. Its history is strong, being the cornerstone of the national economy for the first century and a half of European occupation. This weakened proportionally as the other sectors of the economy built up in the latter half of the 20th century and its reputation changed as the environmental movement gained strength, government support weakened and the urbanisation of the nation reduced the links between rural and city. In recent decades the industry has not been well served by industry spokespeople ‘talking the industry down’ and its leadership failed in the most part to promote the industry, to build its reputation and to embrace education for the challenges ahead as other sectors have successfully done. As a consequence, the emerging workforce has not been attracted to a career in agriculture and critical shortages of appropriately qualified personnel have eventuated at all levels.

The shortage of labour in agriculture has been raised regularly by the National Farmers Federation and agribusiness and the shortage of agricultural graduates has been highlighted by the Australian Council of Deans of Agriculture (ACDA).

Universities have experienced declines in enrolment in agriculture programs for more than a decade to 2008 and the ACDA estimated that the number of graduates was much less than half that needed to satisfy the job market for new graduates (Pratley & Copeland 2008). The job market in that study was based on the estimate in the Productivity Commission Report (2005) which indicated that there were 624,000 employed in the industry, with only an estimated 7% having university qualifications. Based on an average 20 year career, these estimates suggest that there would be around 32,000 jobs annually of which around 2200 would require a degree. A separate study by the Australian Farm Institute (Econotech 2007) estimated that the farm dependant economy was much larger than that indicated by the Productivity Commission, being

of the order of 1.5 million people or 17% of the Australian workforce.

Despite these estimations and the anecdotes from employers about the lack of availability of suitably qualified employees, the job market in agriculture remains somewhat nebulous in the absence of concrete evidence of the vacancies and the areas of demand. Such data would provide the confidence to develop policy, promote careers and substantiate the position of the industry to the community and to the industry itself.

In order to address this issue, Rimfire Resources® undertook a comprehensive documentation of the mainstream advertisements for positions in agriculture commencing in 2006. In combination with ACDA, these data were analysed to ascertain the trends in employment vacancies and to establish a benchmark value for prospects in the job market in agriculture. It is recognised that many jobs are advertised only locally, by word of mouth or targeted by employers and thus would not be included in the following analysis.

Materials and Methods

In order to provide a comprehensive coverage of the media, mainstream and agricultural newspapers and the Internet were incorporated into the study. Table 1 provides the individual papers and websites used. Newspapers and journals were counted on a weekly basis and compiled for each calendar month. Internet jobs on all sites were counted once each month on the same date. The difference in frequency relates to the cost of paper advertising usually limiting an advertisement to a single date whereas Internet sites usually list the position for 30 days at a small proportion of the cost of paper advertisements. The assumption was taken that a monthly sampling of the Internet would pick up the 30 day cycle but minimise the counting of the same job advertisement more than once. Data from print media were kept separate from web-based data to enable the identification of

any trends to be discerned. Multiple positions in any one advertisement were counted as separate advertisements for this exercise. Agribusiness jobs in all organisations were included, not just those in agribusinesses. The period of study reported here are the calendar years 2007 to 2009 with data arranged for quarters of each year.

Table 1: The newspapers and websites used to collate job advertisements in agriculture.

State/National	Newspaper/Website
Queensland	<i>North Queensland Register</i> <i>Queensland Country Life</i> <i>Courier Mail</i>
New South Wales	<i>The Land</i> <i>The Sydney Morning Herald</i>
Victoria	<i>Stock and Land</i> <i>Weekly Times</i> <i>The Age</i>
Tasmania	<i>Tasmanian Country</i> <i>The Hobart Mercury</i> <i>The Launceston Examiner</i>
South Australia	<i>Stock Journal</i> <i>The Advertiser</i>
Western Australia	<i>The West Australian</i> <i>Farm Weekly</i> <i>Countryman</i>
National	Newspapers <i>The Australian</i> <i>Financial Review</i> <i>Rural Business</i>
	Websites AgCareers.com AgBiz Careers.com Seek Career One AgAppointments AgPeople Rimfire

To ensure consistency in category classification, the counting process was required to be undertaken by the same personnel in the same location every month. At no time was counting undertaken where there were no personnel with previous counting experience. The categories chosen were as follows: Animal Health/Nutrition; Feedlot; Dairy; Livestock – Sheep and Beef; Crop Protection; Seed/Biotech; Fertiliser; Commodity Trading; Rural Finance; Rural Merchandise; Distribution; Farm Machinery;

Processing/Manufacturing; Industry grower groups; Government; and Production (Permanent).

As might be expected there were advertisements which did not clearly fit into a category or fitted into more than one category. The following guidelines were used to guide consistent decisions:

- A livestock position with a rural distribution/ services company like Landmark or Elders was counted as Livestock.
- A merchandise role with the above organisations was counted as Distribution.
- A sales role with organisations which predominantly provide materials into the merchandise sector for retail sale, like Tru Test or Gallagher, was classified Rural Merchandise.
- Feedlot roles were classified as either Production or Agribusiness. For example, a feedlot farm worker was classified as Feedlot, whereas a farm worker was classified as Production. A feedlot specialist in a large agribusiness like Bayer would be classified as Feedlot.
- Rural finance roles regardless of organisation, for example, Landmark/Elders/Rural Finance or one of the banks, were all classified as Rural Finance.
- A diesel mechanic for a tractor dealer was classified as Farm Machinery, whereas a diesel mechanic employed on a farm was classified as Production.
- Food processing companies that directly process primary production (for example, cheese manufacturing, dairy product manufacturing directly from farm, meat production direct from farm) were included as either Processing and Manufacturing whereas manufacturing and processing being one further step removed from farm production (for example, semi processed primary products) were not included.
- Dairy specific roles in organisations like Landmark and Elders were classified as Dairy, whereas dairy farmer or dairy hand roles were classified as Production given they are on-farm.
- A farm manager was classified as Production unless it involved processing of the primary product (for example, wool scouring) where it was classified as Processing.

- Trading of commodities was classified as Commodity Trading whereas physical sales of product (for example, wool), livestock and area specific sales roles with organisations like Landmark or Elders were classified as Distribution.
- Roles advertised for industry representative groups, grower bodies, consultants and advisers, positions at rural or agribusiness education institutions and non-sector specific roles were classified as Industry grower groups.
- Where there was uncertainty, the final classification decision was made by a Director of Rimfire Resources and the classification noted for future reference.

Results

The total number of discrete job advertisements in agriculture for the three year period exceeded 50,000, or an average of more than 16,000 per year (Figure 1). It was assumed that there would be duplication of advertisements between print and web and so the number of unique job advertisements occurred between 37,000 and

50,000 being the range between total duplication and no duplication. Sub-sampling at the end of the study period for duplication showed a maximum of 25% crossover of paper and Internet advertising. This estimate has been used to adjust the number of discrete advertisements to a minimum of 47,300 for the three years of study.

Across the years, the adjusted numbers of discrete advertisements to the nearest 100 advertisements were 16,300 in Year 1, 15,800 in Year 2 and 15,100 in Year 3 (Figure 1). The drop-off in Year 3 was most likely due to drought conditions in 2008–9, together with the influence of the global economic downturn. This decline was more noticeable in the production (that is, on-farm) area and preceded the decline in agribusiness jobs. Recovery was evident for both categories towards the end of 2009. In 2007 production jobs comprised over 58% of the advertisements whilst in 2008 this had declined to 54% but recovered to 59% in 2009. In Year 1, after adjustment, there were some 9600 advertisements for production jobs with 8300 in Year 2 and 9100 in Year 3. Corresponding agribusiness advertisement numbers were 6400, 6200 and 5800 for the three years. Thus there were around three production jobs for every two agribusiness positions.

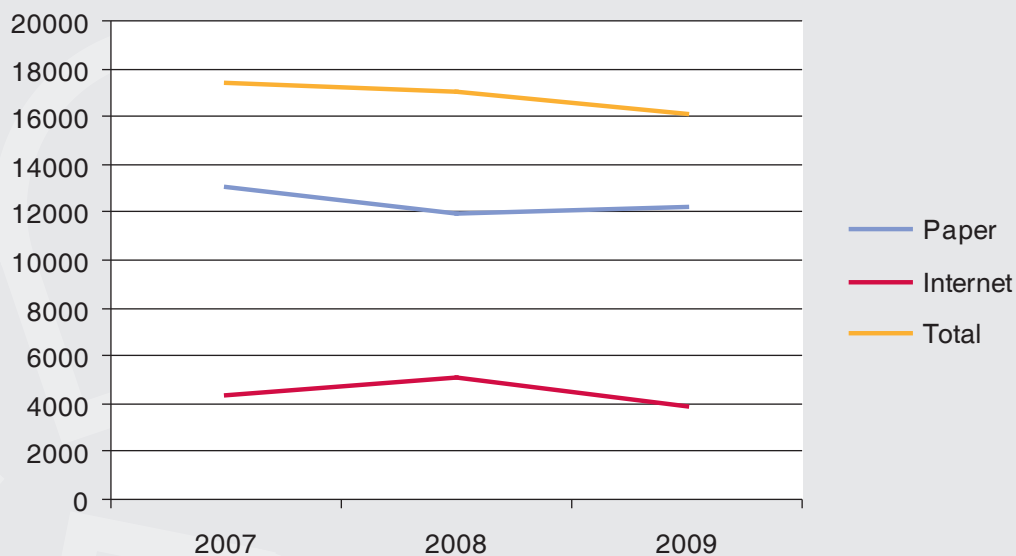


Figure 1: The job market in agriculture based on advertisements in newspapers and online for the years 2007 to 2009.

For the animal industries in agribusiness, the job market was stable over the three year period. In Year 1 the numbers of advertisements, adjusted for overlap, were about 1380, 1760 in Year 2 and 1120 in Year 3. The pattern for these job categories is shown in Figure 2. There was a minimum of 20 jobs per quarter consistently in each of the subcategories used over the period of study.

In the plant industries, the job market was also buoyant with there being consistently 100 or more vacancies per quarter in the Crop Protection field. Demand was strong for employees in the Fertiliser and Seed/Biotech areas as well. The numbers of advertisements, adjusted for overlap, were around 1080 for Year 1, 1380 for Year 2 and 950 in Year 3. The decline in 2009 is likely due to the intensity of the drought at that time. Figure 3 shows the patterns of demand in this area.

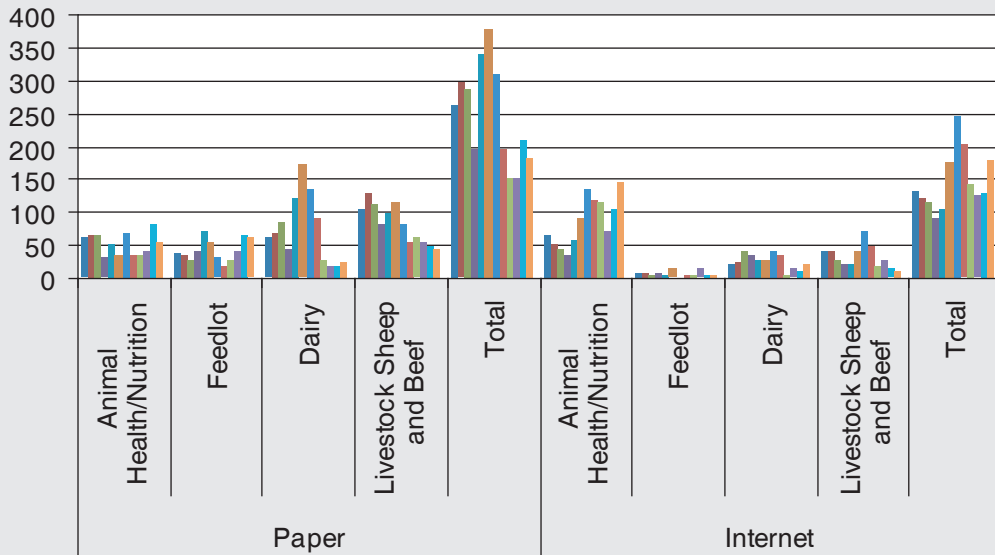


Figure 2: Number of jobs advertised in the animal industries in print and on the Internet for the years 2007 to 2009, expressed in quarters of the calendar year.

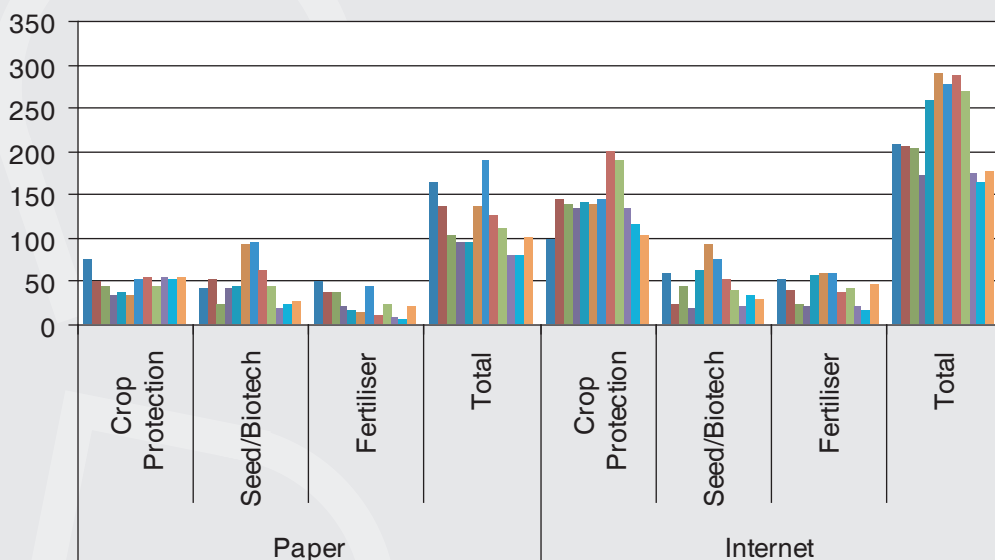


Figure 3: Number of jobs advertised in the plant industries in print and on the Internet for the years 2007 to 2009, expressed in quarters of the calendar year.

Demand remained strong in the Rural Finance and Commodity Trading sectors although there was a discernible reduction towards the end of the period of study, particularly in the Commodity Trading arena although there were signs of recovery at the end of 2009. The numbers of advertisements, adjusted for overlap, were 730 (Year 1), 570 (Year 2) and 490 (Year 3). Indications are that there are at least 40 advertisements per quarter for Rural Finance and at least 20 in Commodity Trading. Figure 4 shows the trends for the period of study.

In the Rural Merchandise and Distribution categories demand remained strong with an improvement towards the end of the period of study in Merchandising and in Distribution advertisements (Figure 5). The numbers of advertisements, adjusted for overlap, for this combined category were around 830 (Year 1), 800 (Year 2), and 1130 (Year 3). Potential employees could expect at least 80 advertisements in Merchandising per quarter and at least 20 in Distribution.

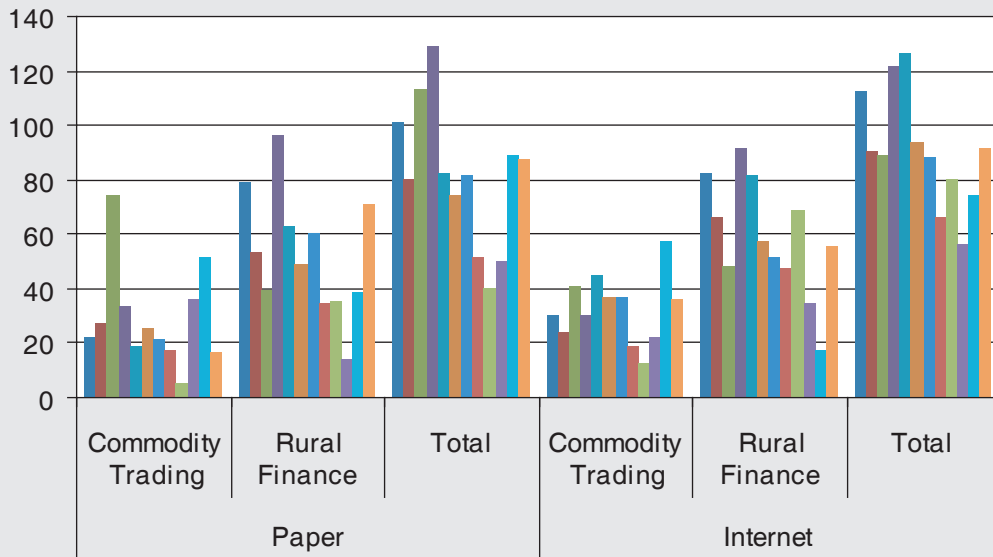


Figure 4: Number of jobs advertised in the finance sector in print and on the Internet for the years 2007 to 2009, expressed in quarters of the calendar year.

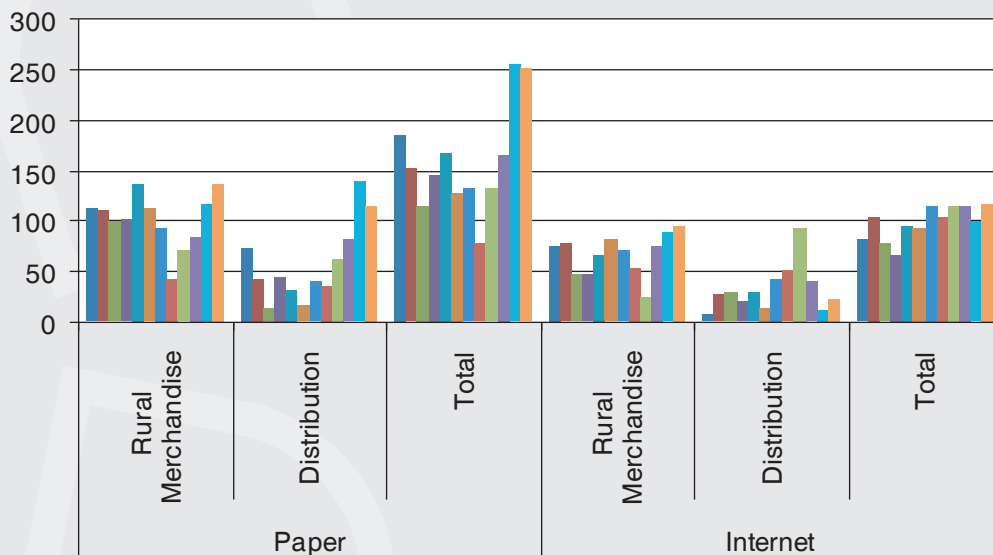


Figure 5: Number of jobs in the merchandising and distribution sector in print and on the Internet for the years 2007 to 2009, expressed in quarters of the calendar year.

In the Farm Machinery category, the numbers of advertisements, adjusted for overlap, were 430 (Year 1), 470 (Year 2) and 640 (Year 3) with at least 60 jobs per quarter being available (Figure 6). The Processing/Manufacture category was somewhat smaller in number being 340 (Year 1), 330 (Year 2) and 420 in Year 3. There appeared to be at least 40 jobs per quarter in Processing/Manufacture (Figure 6).

In the Industry group the numbers of distinct advertisements were 810, 780 and 520 over the three years whilst the government category numbers were 900, 540 and 520. The industry groups were advertising a minimum of 60 jobs per quarter as were governments. There was a noticeable decline in advertisements for both the industry groups and government over the period of study as seen in Figure 6.

Impact of the Internet

The role of the Internet is worth particular consideration because of the trends noted in this study. Overall, the proportion of advertisements available via the Internet was around 26.5% for the three year period. For the production sector this amounts to only 14% over the three years, whereas for the agribusiness sector the proportion is more than 45% for the same period. There is a clear trend towards electronic advertising until late 2008 when there was a significant decline, particularly in agribusiness advertisements (Figure 7).

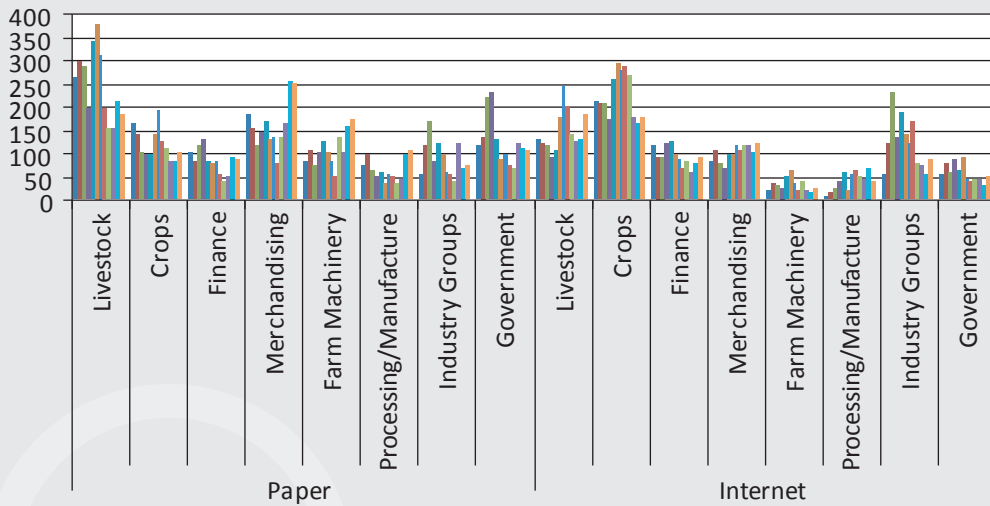


Figure 6: A comparison of the number of job advertisements across the spectrum of agriculture in print and on the web for the years 2007 to 2009, expressed in quarters of the calendar year.

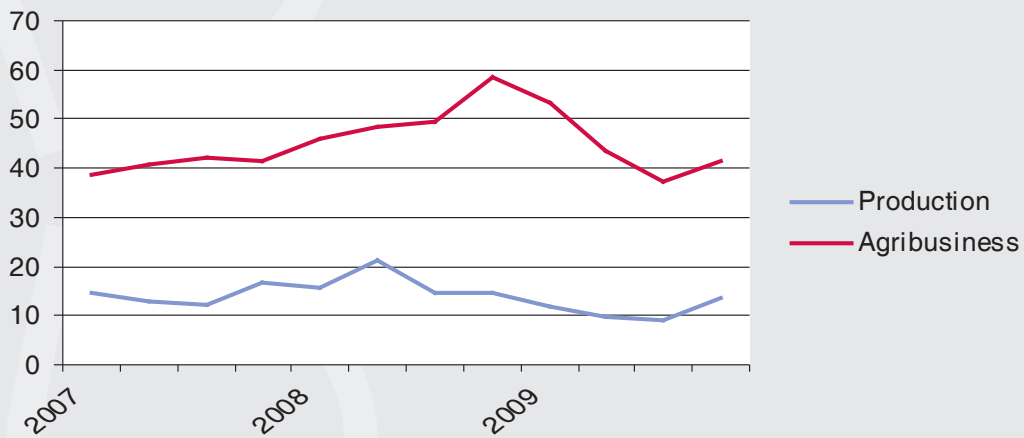


Figure 7: The percentage of agricultural job advertisements in production and agribusiness across Australia using the Internet for the years 2007 to 2009, expressed in quarters of the calendar year.

The use of the Internet varied between Australian states, being proportionally high for Victoria (38%) and South Australia (36%) and relatively low for Tasmania (18%), with the remaining states being in the 20–26% range. Such proportions are shown in Figure 8.

The states of Queensland and New South Wales dominated the job market over the period of study. In round terms there were around 5400 jobs per

year available in Queensland and 4000 per year in New South Wales. Comparable figures in other states were Victoria (2500), Western Australia (2000), South Australia (1300) and Tasmania (500).

There were distinct signs of a decline in paper advertising in Queensland, New South Wales and Victoria, and a trend of increasing Internet advertising in Victoria (Figure 9).

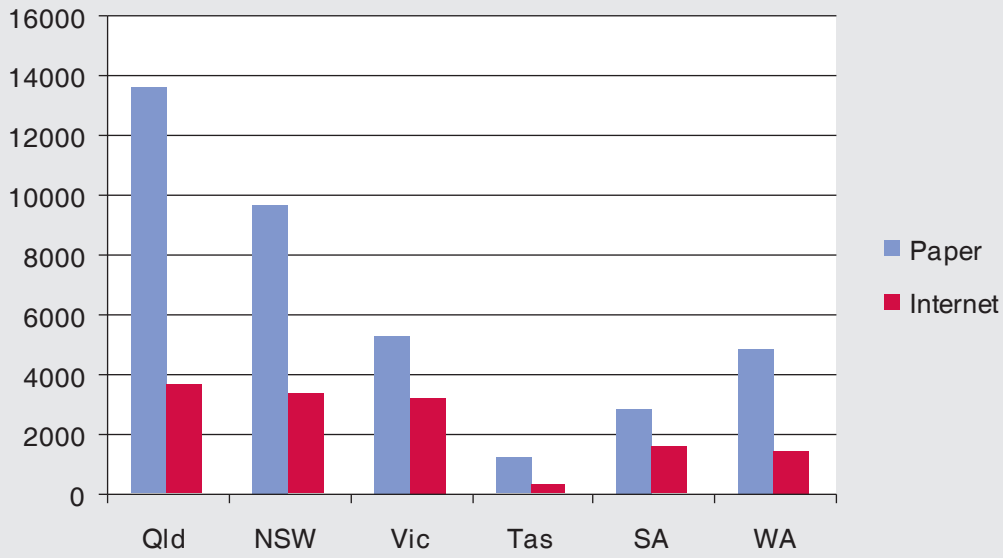


Figure 8: The proportion of job advertisements in agriculture for Australian states from the Internet and newspapers for the years 2007 to 2009.

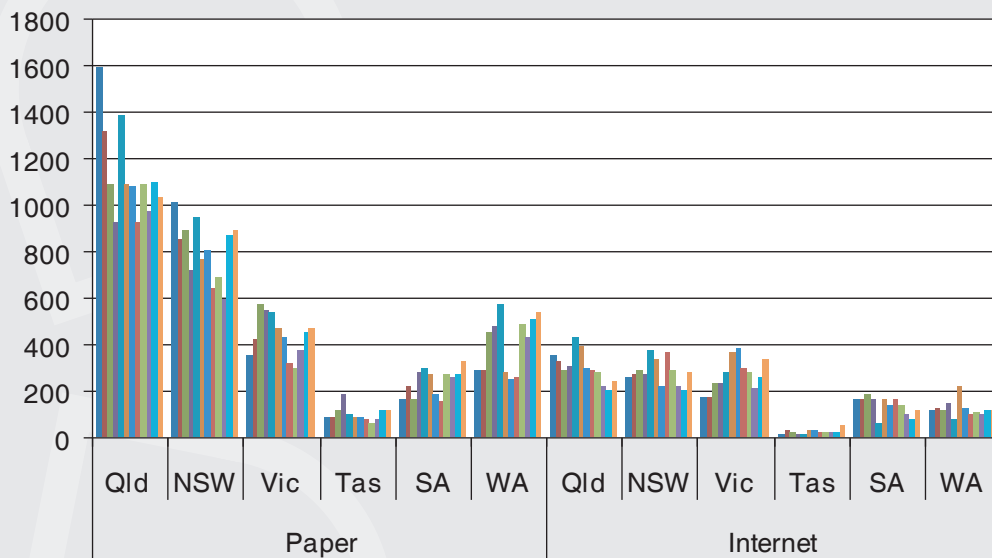


Figure 9: The job market in the Australian states advertised on the Internet and in newspapers for the years 2007 to 2009, expressed in quarters of the calendar year.

Newspaper advertisements

The print media continued to be a strong source of advertisements for agricultural jobs despite the increase in importance of the Internet. However this importance is relative to the category of newspaper. National newspapers represented only about 2% of the newspaper advertisements and state metropolitan papers carried only 10% of the advertisements. The overwhelming majority were placed in the state-based agricultural newspapers (Figure 10).

This pattern was consistent among the states (Figure 11) although the metropolitan press was relatively more important in Western Australia (36%), Tasmania (32%) and South Australia (21%). In New South Wales (1%), Queensland (4%) and Victoria (8%), the metropolitan papers were almost irrelevant for the agriculture job market.

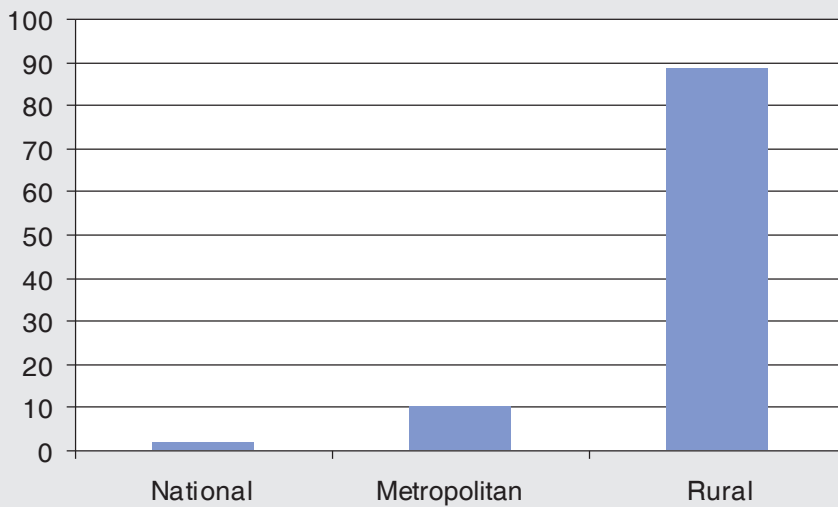


Figure 10: The number of job advertisements in agriculture in the national, state metropolitan and state rural newspapers for the period 2007–2009.

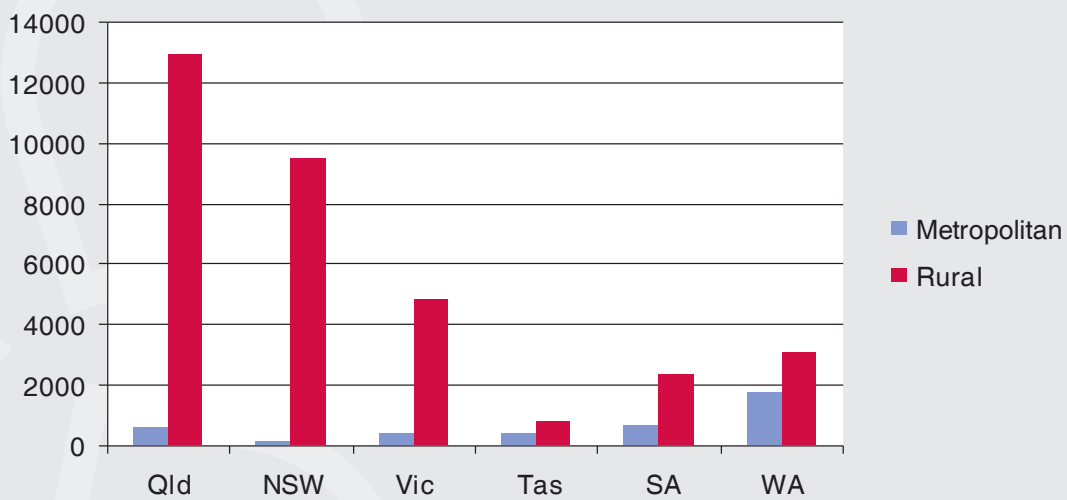


Figure 11: The number of job advertisements in agriculture in metropolitan and rural newspapers for each state over the period 2007–2009.

At the national level, where only 1% of the agriculture newspaper advertisements were placed, *The Australian* contained around 74% of those advertisements in that category with the *Financial Review* containing another 24% of advertisements (Figure 12).

In Queensland, the agricultural newspapers contained over 95% of the agricultural advertisements. The *North Queensland Register* contained about 6% whilst *Queensland Country Life* published the vast majority of 89% (Figure 13).

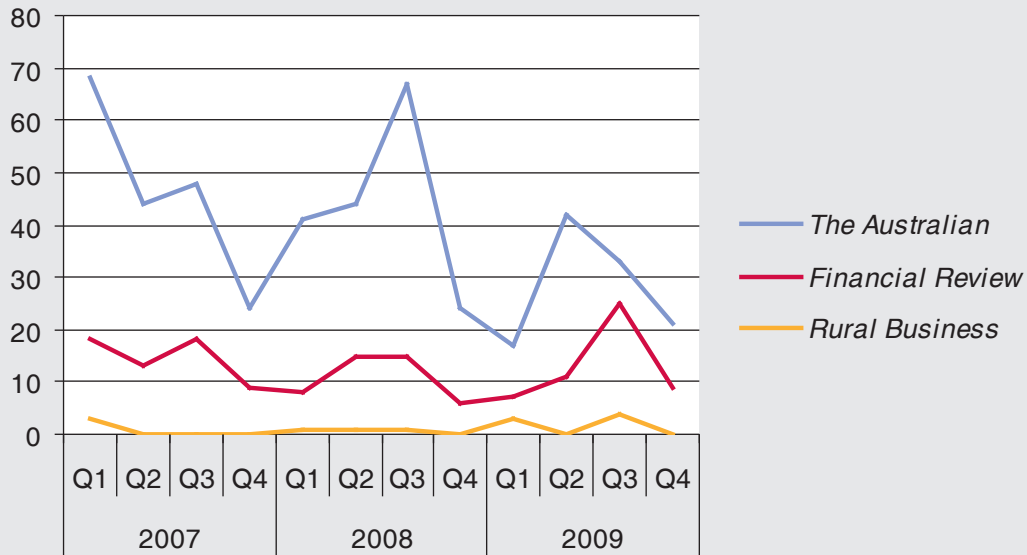


Figure 12: The number of job advertisements in agriculture in national newspapers over the period 2007–2009.

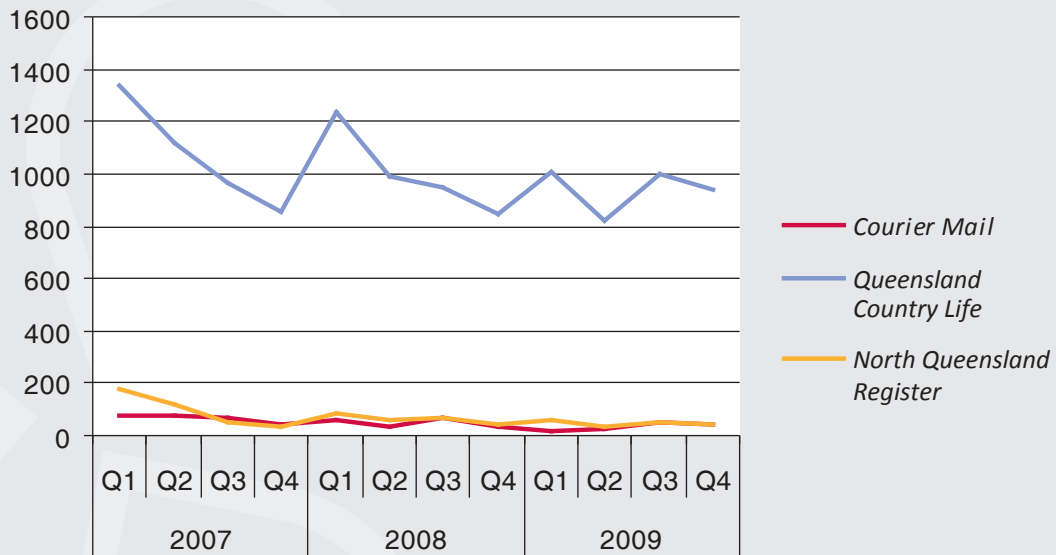


Figure 13: The number of job advertisements in agriculture in metropolitan (*Courier Mail*) and rural newspapers in Queensland for the period 2007–2009.

In New South Wales, *The Land* was the dominant source of newspaper advertisements with 99% of the market. *The Sydney Morning Herald* was insignificant in providing 1% (Figure 14).

industry. *The Weekly Times* provided 74% of the advertisements compared with *Stock and Land* with 18% (Figure 15). Together they have over 92% of the market, making *The Age* (<8%) largely irrelevant for this industry.

In Victoria there are two agricultural newspapers providing job advertisements for the agricultural

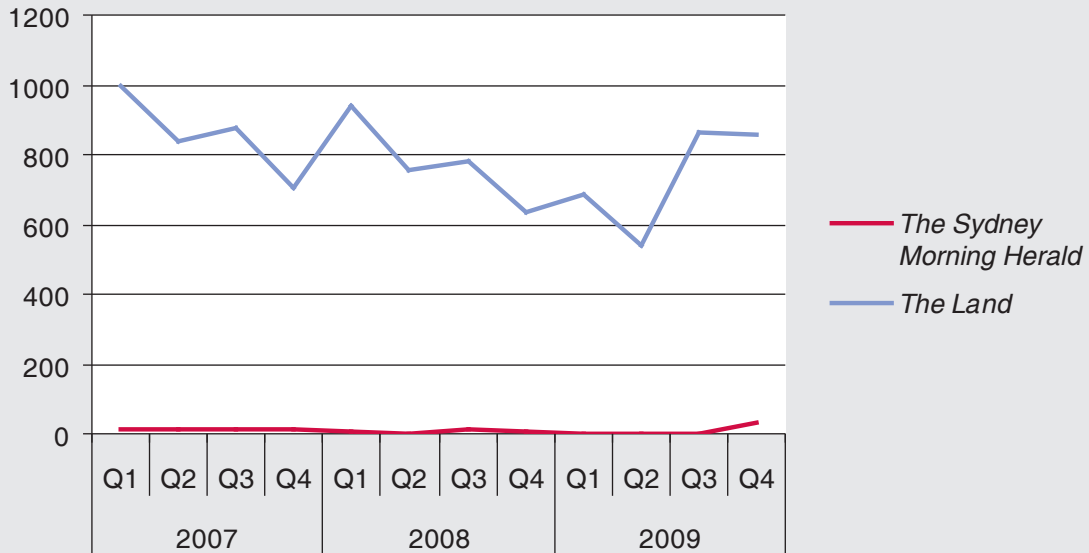


Figure 14: The number of job advertisements in agriculture in metropolitan (*The Sydney Morning Herald*) and rural newspapers in New South Wales for the period 2007–2009.

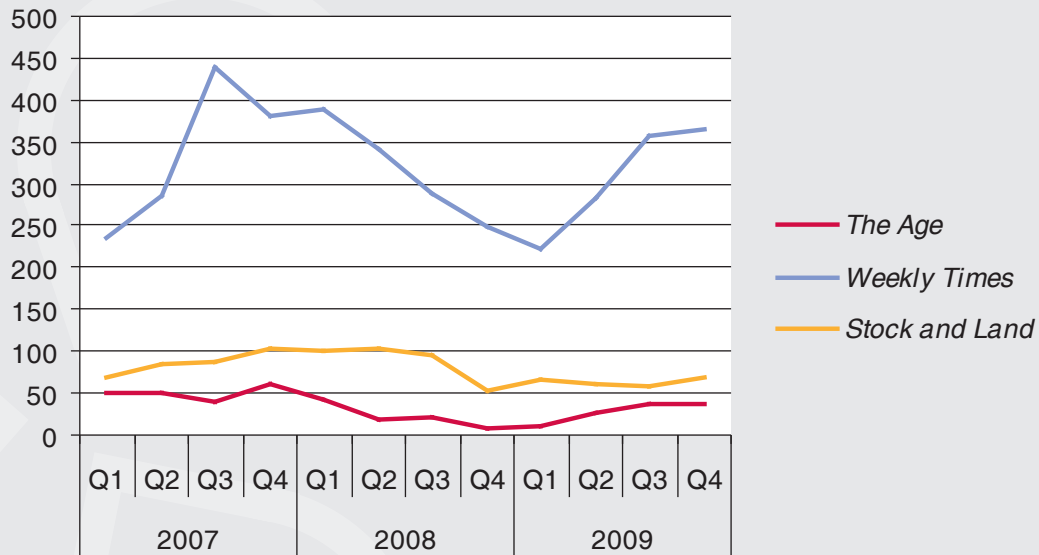


Figure 15: The number of job advertisements in agriculture in metropolitan (*The Age*) and rural newspapers in Victoria for the period 2007–2009.

In Tasmania three papers share relatively equally the advertising market for agricultural jobs. *The Hobart Mercury* (33%) as the metropolitan representative has one-third of the market whilst *The Launceston Examiner* has 43%. The agricultural newspaper *Tasmanian Country* has 25% of the advertisements (Figure 16).

In South Australia, the metropolitan press, *The Advertiser*, provided a relatively high proportion (21%) of the advertisements in that state with 79% being located in the *Stock Journal* (Figure 17).

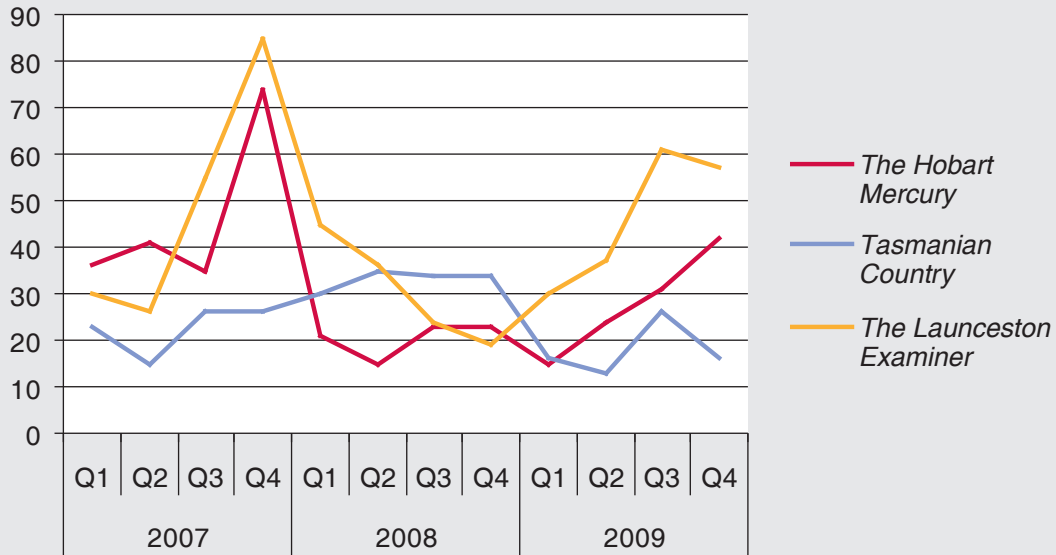


Figure 16: The number of job advertisements in agriculture in metropolitan (*The Hobart Mercury*) and rural newspapers in Tasmania for the period 2007–2009.

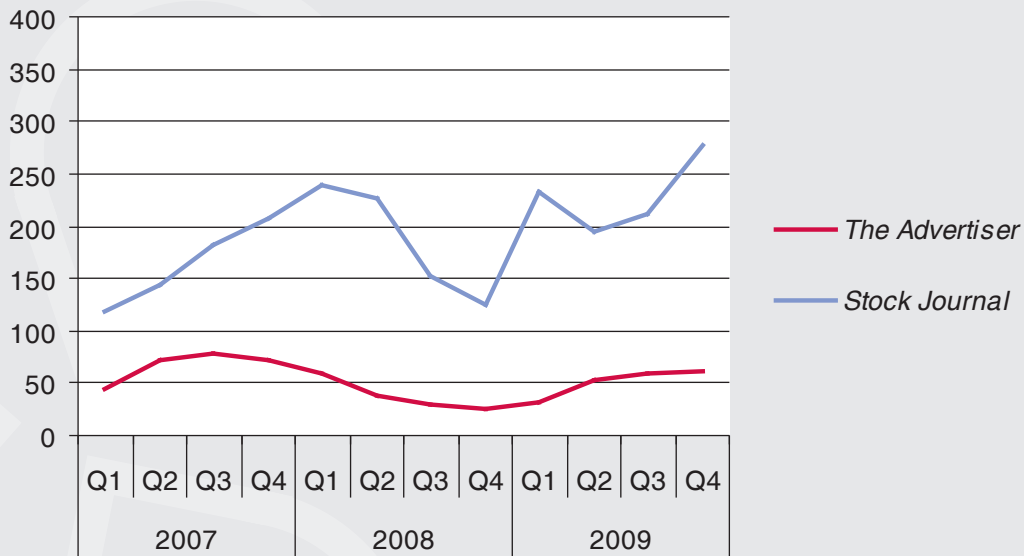


Figure 17: The number of job advertisements in agriculture in metropolitan (*The Advertiser*) and rural newspapers in South Australia for the period 2007–2009.

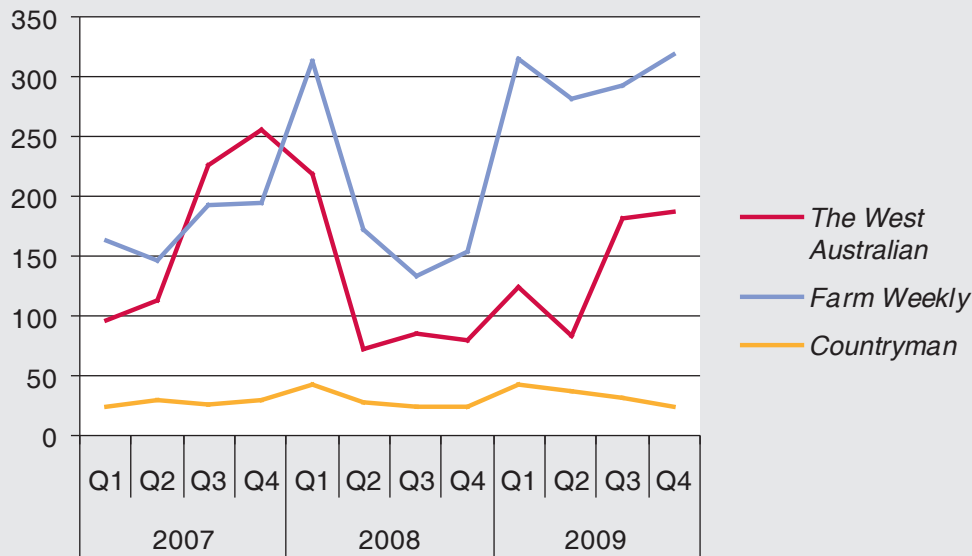


Figure 18: The number of job advertisements in agriculture in metropolitan (*The West Australian*) and rural newspapers in Western Australia for the period 2007–2009.

In Western Australia, *The West Australian* published 36% of the agricultural jobs for the period of study. The most important publisher was the *Farm Weekly* (56%) with *Countryman* providing a modest 8% (Figure 18).

Discussion

The above analysis represents a study in time of the advertised job market in agriculture during which there was a protracted drought and, towards the end, a global recession. Thus these were not the best of times but there was a robustness about the employment prospects for the industry. After allowing for possible overlap between Internet and print advertisements the data indicate that there were over 15,000 discrete jobs available per year during the three year period. A ratio of 3:2 for on-farm jobs to those in agribusiness indicates around 9000 on-farm and about 6000 jobs in agribusiness. It is recognised that there are many jobs that do not make it to the advertising sources observed in this project. Many are advertised in local newspapers, by word of mouth or are targeted by one company on another's employees. Thus the study represents a conservative estimate of the agricultural job market.

The Productivity Commission (2005) estimated that there were about 320,000 jobs (or about 3% of the workforce) directly involved in production agriculture. If we assume that the average working

career in this sector is 20 years, that suggests some 16,000 jobs annually if all are replaced. However many work longer than that and so an average working life on-farm of 30 years would deliver around 10,000 to 11,000 jobs which approximates the number of advertisements measured in this study.

Also estimated by the Productivity Commission was the agribusiness component of the employment market at around 300,000. A similar calculation of a 20 year career would suggest around 15,000 available jobs per year. In this case however the career span is likely to be shorter than longer as such people are more likely to have several careers in their lifetime. The estimate is thus well above the 6000 or so shown in this survey.

It would be increasingly expected that some formal qualifications would be an advantage for appointment for agribusiness positions. Thus VET qualifications would probably suffice for farm machinery, some merchandise positions and perhaps dairy and feedlot employment, whereas most of the remainder would most likely indicate the requirement, or at least the desirability, of a degree. Based on the data in this study this would represent a potential of around 4200 (or 70% of agribusiness jobs) where tertiary qualifications might be encouraged. To this would be added the proportion of production jobs which require managerial expertise. If these were 20% of the

advertisements then a further 1800 might be advantaged by having a degree making a potential demand of around 6000 graduates per year. The study by the Australian Council of Deans of Agriculture (ACDA) in 2008 indicated that at best the Australian universities were graduating fewer than 800 per year in agriculture and related courses for an estimated job market of more than 2200 per year (Pratley & Copeland 2008). This was based on 7% of the workforce having a degree, a situation way below the rest of the population at 22%. The estimate of 6000 in this study is nearly thrice that of the ACDA and would bring the graduate percentage much closer to the community standard but still significantly below it.

This study provides clear evidence that the Internet is increasing in importance as a vehicle for advertising jobs. This is facilitated by the widespread availability of computers in Australian society, the number of specialised websites for agricultural jobs, the timeliness of advertising on the web and the relatively cheaper cost of advertising including over an extended time period. It is intriguing that on-farm jobs continue to be concentrated in print media, suggesting that the targeted demographic are not considered to be computer literate and/or do not have ready access to computers or that the employers are not comfortable with use of the technology at this time. The discrepancies between states in their use of the Internet are also interesting. The high rate of Internet usage in South Australia relative to other states is difficult to explain although unlike other states, a high proportion of positions are likely to be based in Adelaide and surrounds where computer coverage is not problematic. This is reinforced by the relatively high proportion of newspaper advertisements in the metropolitan press, a trend also evident in Western Australia and Tasmania.

Government workforce projections have been largely based on the level of advertisements in the metropolitan press, particularly *The Sydney Morning Herald* and *The Age*. This study shows that such an approach has little relevance to the job market as represented by the pattern of advertisements. Clearly the state-based agriculture papers are much more likely to contain advertisements for agricultural jobs except in South Australia and Western Australia where the job market is much more closely aligned with the capital city in those states. In Tasmania the influence of the capital city is diluted by the influence of Launceston and the relatively small distances involved.

The data overall show that the opportunities for a career on agriculture are strong, both in agribusiness and in production and are substantially in excess of most workforce projections. Such opportunities are greater in Queensland, New South Wales and Victoria probably reflecting the greater diversity of employment and the greater concentration of agribusiness headquarters in these states.

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