Australian farm businesses could do better with different funding models

Adam Tomlinson, Australian Farm Institute

The biggest challenge facing Australian agriculture is the risk of a drought, but it’s not the normal climatic drought that farmers are used to routinely managing, but a drought of capital. The risk arises because Australian farming businesses rely very strongly on debt financing, and there is not the wide variety of different funding models that exist in other sectors, or in the agriculture sectors of other nations.

The potential for Australian farms and agribusinesses to take advantage of the undoubted boom in global food demand driven by Asian middle-class consumers depends heavily on the ability of farm businesses to access adequate capital to enable them to gear up and expand their output. However, loading up farm businesses with extra debt is not always a viable or attractive option, compared to other funding models.

Access to adequate capital was the key focus at the Australian Farm Institute’s recent Funding Agriculture’s Future Conference.

As could be expected, the presentations delivered at the conference sparked a lot of discussion about the funding arrangements for the Australian farm sector. International speakers were also present at the conference and discussed farm and agribusiness funding models in Asia, Brazil, New Zealand and the United States (US).

Interestingly, these speakers highlighted that farmers and agribusinesses in these nations generally have access to funding arrangements that are different and more varied than those commonly utilised in Australia. The key differences include the depth of the funding pool available, the types of investors interested in agriculture, the use of tradeable farm product bonds and equity partnerships to finance farm businesses, the greater utilisation of farmland leasing as a means of entering farming, the role of risk-mitigation insurance schemes, and the role of national farm credit systems.

(continued over page)
Assessing the investment attractiveness of Australian agriculture

To ensure that the Australian farm sector attracts the most effective capital in the future it is critically important that investors fully understand the opportunities and challenges associated with the sector. The major advantages associated with investment in the Australian farm sector, from an overseas perspective, include national economic stability, the technological and managerial skill of farm business managers, and the regional trade opportunities for food and fibre exports. Unfortunately, however, factors such as climate variability and commodity price volatility frequently deter potential investors. For example, Australian superannuation fund managers and asset consultants generally have a limited understanding of the agricultural industry and as a result prefer to invest in more straightforward assets, such as listed equities.

Interestingly, an analysis of the financial performance of 270 broadacre farm businesses in Western Australia (WA) presented to the conference indicated that these businesses achieved better returns than the gains recorded by the Australian share market All Ordinaries Index during the decade from 2002 to 2011 (Kingwell 2014). The analysis also showed that the average variation in wealth appreciation for these farm businesses was less than the volatility in the All Ordinaries Index over the same period.

Another presentation to the conference identified that Western Australian broadacre farm businesses achieved an annual average return on capital of 4% during the period between 2005 and 2013, but that there were distinct differences between farm businesses. The top 25% of broadacre farms achieved an annual average return on capital of 8% and the bottom 25% achieved an annual average return of 1% (see Figure 1). Analysis also identified that the top 25% of broadacre farms in WA performed well above the bottom 25% during the good years of 2007, 2008, 2011 and 2013, but performed more closely to the bottom 25% in the bad years of 2006, 2009 and 2010.

The discussion triggered by these presentations aired concerns that funding models for farming in Australia have a long history of reliance on debt funding, display low innovation, are generally too restrictive and not always suitable for corporate structures (Planfarm 2014). To address some of these issues, it was suggested that improvements could be made by offering things like drought clauses in principal and interest finance agreements, a diversity of financial products, off-take agreements, risk mitigation insurance, and models which enable skilled managers to manage bigger areas without necessarily expanding their capital commitments.

Farm business financial indebtedness and debt-servicing

Australian farm businesses are largely funded by debt financing, with funding being relatively cheap and accessible for established businesses over the last 15 years or so. This has generally meant that when farmers have looked to innovate, develop or expand, they have principally looked to the bank to obtain the money by mortgaging their farm land as collateral. It is uncertain however, whether this system can be relied upon so heavily in the future, with productivity growth slowing due to a lack of new investment and a shortage of young people entering farming, due to insufficient upfront equity when trying to access bank funding.

The reliance of debt funding in the Australian farm sector can be illustrated by the trends in inflation-adjusted (real) debt per hectare over the last 24 years (see Figure 2). According to the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) farm survey data for all broadacre industries, the average debt per hectare has followed a similar path to equity per hectare, with both these indicators doubling over this 24 year period in real terms. Unexpectedly however, real gross cash receipts and net-cash income per hectare have not followed the same path. Gross cash receipts per hectare in real terms increased by 40% from the early 1990s to the early 2000s, but have remained relatively static since that time. Real net-cash income per hectare increased rapidly during the late 1990s and early 2000s and has been more volatile on a year-to-year basis when compared to the other indicators.

In 2011, ABARES reported that farm debt had increased rapidly due to the effects of low interest rates (making debt more attractive), farm size expansion, changes in production from livestock to cropping and the impacts of drought on farm income. Since 2011 however, farm debt per hectare (in real terms) has retreated to the lowest

Figure 1: Western Australian broadacre farm businesses return on capital* 2005–13.
level in seven years, due largely to improvements in net-cash income per hectare for the average broadacre farm business.

Other major factors contributing to the recent decline in farm debt levels include shifts in farmers’ attitudes and bank policies in relation to farm debt levels. There has been a general move by farmers in recent years to reduce debt to a more manageable level following the experience of multiple droughts and commodity price fluctuations during the period between 2002 and 2011. Bank lending policies have also changed since the advent of the global financial crisis (GFC) in 2007. The GFC impacted on bank funding liquidity and credit risk policies at a time when the Australian farm sector was experiencing lower net-cash income due to drought.

Notwithstanding these developments, the real level of farm debt per hectare for the average broadacre farm business in Australia is still twice what it was in the early 1990s.

One way to assess how the farm sector has performed in servicing debt commitments is to look at interest coverage, which is calculated by dividing the net-cash income by the total interest expense. As a general rule of thumb, if the interest coverage ratio stays above 1.5, then the farm business would be considered to have a sufficient financial buffer to service its debts.

An interest coverage analysis was carried out for the average beef, sheep, mixed livestock, and wheat and other crop farm businesses for the period between 1990 and 2013 (see Figure 3). This analysis showed that the average farm business achieved an interest coverage ratio well above 1.5 in most years.

Given the relatively sound debt servicing history of the Australian farm sector, an interesting issue for discussion at the conference was how corporate farming models perform financially in Australia.

A motto for corporate farming groups – ‘buy well and manage well’

One of the presenters at the Funding Agriculture’s Future Conference defined corporate agriculture as agricultural businesses where the owner of the capital is separate from the operator (Sackett 2014). The paper noted that the two main advantages of corporate agriculture, particularly for the farm sector, were better access to capital and better access to expertise (specialisation). The presentation also highlighted that the two main performance requirements for corporate agriculture were ‘buying well’ and ‘managing well’.

Some analysis was provided of the track record of corporate agriculture in the Australian farm sector. It showed total annual returns to investors over the period from 2000 to 2013 ranged from -5.4% to an outlier of 20.7%, with the annual average return being approximately 4%. Some of the reasons highlighted for the lack of success of corporate farming in Australia included the lack of transparency in investment proposals, the uncertainty in financial reporting (making comparisons and benchmarking difficult) and the rigid overhead cost structures associated with a corporate model. The competition from successful family owned-operated farm businesses was also noted, as family owned-operated farms generally have a long-term view as well as more management flexibility, accountability and a flat management structure.

Nevertheless, one of the major challenges faced in the Australian farm sector for both corporate and owner-operator farm businesses is competition for investment capital. Table 1 (over page) shows that there are enterprise categories of farm businesses that have historically demonstrated similar financial performance to equities and default superannuation fund investment portfolios. This means that for the farm sector to compete with equity investments or to be included in superannuation investment portfolios, the first hurdle to overcome is convincing the investment manager that farm investments will provide relatively competitive returns in the long term – similar to the returns that were recorded in the 1980s, 1990s and early 2000s.

**Figure 2:** Index of Australian broadacre farms debt, equity, gross receipts and net-cash income, 1990–2013.

<table>
<thead>
<tr>
<th>Year</th>
<th>Equity per hectare</th>
<th>Debt per hectare</th>
<th>Total cash receipts per hectare</th>
<th>Net-cash income per hectare</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>50</td>
<td>100</td>
<td>150</td>
<td>100</td>
</tr>
<tr>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>2013</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
</tr>
</tbody>
</table>

Sources: ABARES, AFI analysis.

**Figure 3:** Interest coverage ratio for beef, sheep, mixed livestock and grain farms, 1990–2013.

<table>
<thead>
<tr>
<th>Year</th>
<th>Beef</th>
<th>Sheep</th>
<th>Mixed livestock</th>
<th>Wheat and other crops</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>2013</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
</tbody>
</table>

Sources: ABARES, AFI analysis.
Apart from competition within the Australian economy, the Australian farm sector also competes internationally with other agricultural producer-exporter countries for investment capital. When looking closely at the farm funding models operating in major competitor countries, it becomes clear that the Australian farm sector could do better with different funding models.

The following sections discuss the funding models that operate in each of the key competitor countries, with a focus on the models that are potentially applicable to the Australian farm sector.

**Brazil’s farm funding models**

There are two main farm funding models that are used in Brazil but not in Australia, including the national rural credit system and Commodity Price Reference (CPR) farm product bonds. The rural credit system in Brazil involves both state-owned credit providers and commercial banks. The rural credit system also relies heavily on demand deposit regulations, rural savings allocations, and the Brazilian Economic and Social Development Bank (BNDES) as official sources of funds to the Brazilian farm sector.

The CPR farm product bond allows farmers to access capital by financing what they intend to produce or what they have already stored. Farmers sell a bond specifying a volume of product that they will deliver on a certain date, with no option to default on the delivery commitment. The CPR farm product bond in the hands of the buyer becomes a tradeable asset, and to enable young people to become farmers. However, when it comes to attracting investment capital, New Zealand’s farm sector is well ahead of Australia’s.

The owner-operator farm business structure remains the dominant structure in New Zealand, and the banking industry remains the dominant source of capital. Farm businesses in New Zealand are mainly involved in dairy farming with over 70% of the national gross value of farm production generated from dairy products. However, as farm consolidation and the expansion of farm size has occurred in most farming industries in New Zealand, there has been upward pressure on the value of farm land. To overcome the challenges associated with the high costs of farm business assets, and to enable young people wanting to become involved in farming, two different farm funding models have been operating successfully in New Zealand. These models are sharemilking and equity partnerships.

The sharemilking model involves two separate farm businesses with one generally owning the dairy cows and the other generally owning the land. It is estimated that 36% of the dairy cows producing milk in New Zealand are owned under sharemilking arrangements. One of the major reasons why this model works successfully in New Zealand and not so successfully in Australia is the reliability of pasture production. To put it simply, New Zealand dairy farm businesses operate relatively low-risk farming systems with pasture and milking sheds, while many Australian dairy farm businesses require additional management for supplementary feed rations and feed storage infrastructure.

Equity partnership models are also more common in New Zealand than Australia. The equity partnership model is similar to a private equity funding arrangement, except that in New Zealand’s case much of the capital being invested into farm partnerships is coming from other farmers. There are numerous iterations of this model but in general a partnership is formed which includes a managing partner involved in day-to-day farm operations and equity partners that contribute capital such as cash, dairy cows and farm land.

The equity partnership models are not widely used in Australia, however, these funding models could play a role in the future. When comparing Australia to New Zealand, a major reason why the equity partnership model has not developed in Australia is likely to be

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**Table 1**: Average annual returns for the All Ordinaries Index, default superannuation funds and broadacre farms, 1974–2013.

<table>
<thead>
<tr>
<th>Period</th>
<th>All Ordinaries Index</th>
<th>Superannuation returns*</th>
<th>Wheat and other crops farms**</th>
<th>Beef farms (top 25%***</th>
<th>Sheep farms (top 25%***</th>
</tr>
</thead>
<tbody>
<tr>
<td>1974–2013</td>
<td>15.2%</td>
<td>10.3%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1984–2013</td>
<td>12.9%</td>
<td>9.7%</td>
<td>9.2%</td>
<td>9.5%</td>
<td></td>
</tr>
<tr>
<td>1994–2013</td>
<td>11.2%</td>
<td>7.2%</td>
<td>6.0%</td>
<td>8.4%</td>
<td>9.9%</td>
</tr>
<tr>
<td>2004–13</td>
<td>11.6%</td>
<td>6.8%</td>
<td>4.4%</td>
<td>7.1%</td>
<td>8.3%</td>
</tr>
<tr>
<td>2009–13</td>
<td>13.0%</td>
<td>4.1%</td>
<td>2.8%</td>
<td>1.4%</td>
<td>5.3%</td>
</tr>
<tr>
<td>2013</td>
<td>14.8%</td>
<td>16.7%</td>
<td>5%</td>
<td>0.7%</td>
<td>3.2%</td>
</tr>
</tbody>
</table>

* ASFA/APRA superannuation statistics. ** Industry average annual returns including changes in capital value. *** Industry top 25% based on return on equity and indicates average annual returns including changes in capital value.

Sources: ASX, AMP Group, ASFA, APRA, Frank Delahunty Pty Ltd, ABARES, MLA, AFI analysis.
the lack of liquidity in the farm land leasing market. Fortunately for New Zealand farm businesses, farm land does not attract capital gains tax when it is sold, and this means that stakeholders of farm businesses, involved in land ownership, can buy-in and sell-out of equity partnerships relatively easily.

United States farm funding models

The two key differences between farm funding models in the US and Australia are the US national farm credit system and the liquid farm land leasing market that exists in the US. The US$360 billion in farm debt held by US farmers is split between commercial banks (45%) and the US Government’s farm credit system (55%). Farm debt obligations are generally divided into three types of loans, which are crop/seasonal, machinery, and real estate. The farm land real estate loans are mostly provided by the farm credit system, with interest rate discounts and risk mitigation insurance advantages provided to farmers when lending money to buy farm land real estate. Essentially, these advantages for the farm credit system make it challenging for commercial banks to compete in the farm land real estate lending market, which means that commercial banks focus more on loans that service farm production needs.

In comparison to Australia, the US has a deep and liquid leasing market for farmland (Noonan 2014). This is particularly the case when rising land prices and production costs intensify the financial needs of agriculture, and ultimately creates a greater barrier to entry for young and beginning farmers. Higher prices for land and fixed expenses appear to be shifting the structure of farm enterprises managed by young and beginning farmers from an owner-operator model to a renter-operator model (Kauffman 2013). In 2011, it was estimated that only 36% of farmers younger than 35 were full owners of farm land.

Renter-operator farm funding is not as common in Australia as it is in the US. Some of the reasons why a renter-operator farm funding model is not as prevalent in Australia may include the lack of risk management insurance in Australia, and the taxation arrangements applicable to capital assets in Australia.

The US farm sector is unique in that it has access to a wide variety of revenue insurance products including crop revenue coverage, revenue assurance, income protection, livestock risk protection, and livestock gross margin insurance. These insurance products are subsidised by the government and provide greater security to US investors providing capital to farming businesses.

The US tax system for the transfer of capital assets is also different to Australia with various estate and inheritance taxes impacting on farm land ownership. To avoid hefty taxes, farm land assets in the US are generally transferred to a spouse or charity, or gifted to an individual. These arrangements have generally led to an increasing number of absentee landlords who continuously lease their land rather than start farming it themselves.

Although the Australian tax system includes capital gains tax on the transfer of farm land (except for estates), it has not generally led to the number of absentee landlords that are seen in the US. This is possibly due to farmers in Australia preferring to either roll capital gains into the subsequent purchase of farming assets, conduct intergenerational transfer of the land to individuals willing to become farmers, or simply having more farmers who are content to sell their land and pay the tax.

Conclusion

To ensure that the future of Australian agriculture is adequately funded, it is important that good policy settings are enacted with a long-term vision, an effective market place is created to allow efficient transactions to take place, farm returns and management are improved, and more entrepreneurialism is encouraged.

Australian farm funding has a long history of reliance on debt, with little innovation. The ‘normal’ model is generally too restrictive and not always suitable for corporate structures. As others have suggested, improvements could be made by offering things like drought clauses in principal and interest finance agreements, a greater diversity of financial products, off-take agreements, risk mitigation insurance, and models which allow the separation of farm skills from farm capital.

Additionally, for the Australian farm sector to access adequate capital and to compete with equity investments or to be included in superannuation investment portfolios in the future, the first hurdle to overcome is convincing investment managers that farm investments provide relatively competitive returns in the long term – similar to the returns observed in the 1980s, 1990s and early 2000s.

Undoubtedly, farm funding models operating in major competitor countries are different to the model that is common in Australia, which means that the Australian farm sector may benefit from adopting or adapting some of these arrangements. The models of interest include the farm product bonds utilised in Brazil, the equity partnership arrangements common in New Zealand, and the farm land leasing arrangements in the US which are underpinned by risk mitigation insurance.

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Designing balanced and effective farm animal welfare policies for Australia

Farm animal welfare is becoming a flashpoint of misunderstanding between the agricultural sector and the general Australian community. At the heart of the misunderstanding is increasingly divided perceptions about what constitutes ‘farm animal welfare’. It seems, the general community is being encouraged to believe that what is depicted in children’s storybooks is the ‘natural’ state for farm animals, with the concept often based on personification of the animal, including attributions of human emotions and instincts. On the other hand, farmers working with animals take animal health very seriously and have developed a different definition of animal welfare based on observation and the need to maintain livestock productivity.

Recent policies and private retailers’ initiatives have contributed to this misunderstanding, as illustrated by the rapidly enacted but short-lived ban on the export of live cattle to Indonesia in 2010, or the unilateral promotion of specific practices like sow-stall pork and free-range eggs by major supermarket chains. While the adoption of these measures accords with community perceptions and consumer expectations, the extent to which these actions improve farm animal welfare is much harder to define.

The Australian Farm Institute (AFI) is undertaking a research project that involves a comprehensive review of animal welfare science, and the extent to which government policies and private-sector ‘standards’ have a basis in that science and therefore have the potential to improve farm animal welfare. This project aims to document constructive ways to improve the alignment between farm animal welfare policy and farm animal welfare science in Australia.

A review of existing literature will clarify how today’s scientists understand and measure animal welfare. The review will discuss the role of ethics and beliefs in the animal welfare debate while remaining focused on objective science. The research will examine why ‘animal welfare’ is still often associated with ‘animal cruelty’. The concepts of ‘five freedoms’ or a ‘life worth living’ underpinning most farm animal policies worldwide will be examined. The review will also discuss developments that are leading to greater linkages between animal welfare standards and trade laws, and how these developments may play out in the near future.

The desktop analysis will be complemented by interviews with managers from the World Animal Health Organisation (OIE), chairs and experts of animal welfare committees in Australia and overseas, as well as discussion with policy-makers and farm animal welfare program managers.

The study will examine the current Australian public policies addressing farm animal welfare. The Australian Constitution gives the states and territories responsibility for prevention of animal cruelty, with the Federal Government tackling issues impacting international relations and trade. However, the recent Australian Animal Welfare Strategy 2010–14, and related standards and guidelines, have been developed to improve consistency and clarity. This will be discussed as well as recent changes to the way the Federal Government coordinates animal welfare.

A series of meetings with policy-makers, retailers, farmers and non-governmental organisations (NGOs) will also allow for the documentation of programs addressing animal welfare. The study will compare the way each program defines animal welfare, including objectives, budget, relations with farm businesses, and capacity to improve ‘animal welfare’ as defined in the literature review.

Selected cases illustrate the different types of issues associated with animal welfare policies. In this context, retailer programs, government standards, quality assurance programs, NGO programs, and international organisations’ initiatives will be analysed.

Public debate around the issue of animal welfare tends to attract media attention, as it contains emotive imagery and opinions. In practical terms, assessing and improving farm animal welfare remains the responsibility of the farm sector. Before changing any practices, a large amount of important research and extension still needs to be done, and effective implementation comes at a cost in terms of time, knowledge and dollars. This, in combination with the complexity of animal welfare science explains why these policies need to be taken very seriously.

It is unfortunate that discussion of this issue often comes with overplayed emotions, controversies and strong opinions. The research aims to bring much needed objective analysis to the issue.
Carbon farming highlights farmers’ custodian role

Farmers spend their days managing carbon in the landscape, but most farmers probably never think of their role in these terms. The Australian farm sector may only account for 2% of Australia’s gross domestic product, but takes responsibility for the environmental management of over 50% of Australia’s land mass. One of the mechanisms for Australian farmers to be recognised for their efforts towards sustainable land and natural resources management includes participation in carbon farming projects.

Recently the Institute launched a Carbon Farming Tools webpage that includes links to short videos on carbon science, carbon markets and on-farm case studies. There are also PowerPoint presentations, case study analyses and an online question and answer portal that can assist farmers and advisors to learn more about carbon farming activities and find answers to questions. The Institute has also enhanced the capabilities of the FarmGAS Calculator with an extra financial modelling tool, which enables farmers, researchers and advisors to compare the emissions reductions and financial performance of various carbon farming projects by generating marginal abatement cost curves. The information generated by the new FarmGAS Financial Tool provides a quick comparison of the cost effectiveness of different methods of greenhouse gas mitigation and carbon sequestration.

Interviews with farmers operating beef, sheep and grain farming enterprises form the central component of the Carbon Farming Tools online resources. The farmers discussed different emissions reduction activities that might be applicable for their specific farm. These activities included planting trees, dietary supplements for livestock, nitrogen fertiliser inhibitors, improved livestock genetics and general changes to farm practices. Essentially, discussion about these different emissions reduction activities was used in the video production, case study reporting, PowerPoint presentations and the development of modifiable model farms preloaded on the FarmGAS Calculator.

One of the clear outcomes of the carbon farming tools project was that the case study farmers saw carbon farming as a way to show the general public that they were responsible custodians of the Australian landscape and environment. This was highlighted by the following statement made by one of the case study farmers:

“We need to do these sorts of things to educate people around the farms as well as in the cities as to what farmers do – we look after the land. If we abuse our land and degrade it, it won’t give us the return that we need to live.”

The decision support tools have been launched on the Institute’s Carbon Farming Tools webpage. A DVD of the carbon farming videos is available free of charge from the Institute. If you would like to order a copy please contact the Institute via email at info@farminstitute.org.au or telephone on 02 9690 1388.
Exploring the advantages and disadvantages of proposed changes to university fees

Senator the Hon Kim Carr
Shadow Minister for Higher Education

Since the Abbott Government announced its Budget plan to cut higher-education funding and deregulate fees, Australia’s universities have been engaged in two activities that sit uncomfortably together. They have been calculating how much fees will have to rise to make up for cuts in Commonwealth teaching grants that also fund research, and they have been trying to reassure students about the prospect of crippling debt. The former exercise has undermined the latter.

With regard to agriculture faculties, the clearest indication has come from the vice-chancellor of Charles Sturt University (CSU), Professor Andrew Vann, who said:

For CSU we calculate this [the funding cut] to be an average of 23.5 per cent across the board. Some areas would need to rise substantially. Science fees would need to be increased by 62 per cent, Agriculture by 48 per cent...

Not all vice-chancellors have been as forthcoming, but there is no reason to think that CSU’s prediction of a hefty 48 per cent rise is wildly atypical. Across the university sector the cuts in Commonwealth grants for teaching will be 20%, close to Professor Vann’s calculation, and the peak body Universities Australia has estimated that the cost of agriculture degrees will rise by 43%.

In the closely related discipline of veterinary science, whose graduates are crucial to maintaining strong, disease-free agricultural industries, modelling by the Australian Veterinary Association estimates that repayments for a veterinary degree could nearly double, to $270,000, and take graduates from 37 to 45 years to pay off, compared with 9 to 17 years at present.

The difficulties agriculture and veterinary science faculties already face in attracting students will be exacerbated by the combined effect of reduced funding, uncapped fees and changes to student loans that will substantially increase the debt burden for graduates.

Enrolments in agriculture courses have fallen over the past decade. The Australian Council of Deans of Agriculture reports that last year there were only 800 graduates to fill more than 4000 job vacancies. Established universities in the capital cities have been losing enthusiasm for agriculture courses because of the high cost and low enrolments, and some of these institutions have folded their agriculture faculties into broader life sciences faculties.

Until now that has provided an opportunity for smaller, regional universities to offer courses such as agriculture that are directly beneficial to the regions they serve, and which attract local students. However that has depended on maintaining the present funding arrangements, because regional universities still struggle to compete with the lure of their metropolitan counterparts.

In Christopher Pyne’s brave new world, however, funding will be cut and universities will have to raise fees to make up the shortfall, which will deter many prospective students. The Minister’s suggestion that smaller universities might cut fees to become more competitive is a fantasy, and the changes will hit regional universities and their agriculture faculties hardest.

Most bizarrely of all, the Abbott Government is doing this while negotiating trade agreements that emphasise Australia’s strengths as an agricultural producer. Just when agriculture graduates will be needed most, Mr Pyne is doing his best to ensure that there will be even fewer of them. He is like the failed agricultural economist who thought we no longer need cows because we have milk.

Senator the Hon Kim Carr
is Shadow Minister for Higher Education, Research, Innovation and Industry, and Shadow Minister assisting the Leader for Science. During the previous Federal Labor Government he served as Minister for Innovation, Industry, Science and Research, and Minister for Higher Education. He has been a Senator for Victoria since 1993 and a member of the ALP National Executive since 1994.

John Ralph Essay Competition 2014

The John Ralph Essay Competition is an annual essay competition conducted by the Australian Farm Institute to encourage strategic and creative thinking about issues of importance to the future of the sector in Australia. The topic of the John Ralph Essay Competition for 2014 is: *Does the Australian agricultural sector need a common national brand to promote its products in international and domestic markets?*

The competition awards two prizes – **Open**: $5000 and **Student**: $1000, plus free attendance at the 2014 Australian Agriculture Roundtable Conference

Entries close: **Friday, 19 September 2014**
How higher education reform will benefit regional communities and students

Hon Christopher Pyne MP
Minister for Education
Leader of the House
Member for Sturt

Australia’s strong agricultural heritage is something in which we can all be proud. Generations of Australians have grown up on farms, growing the produce and raising the livestock that keep our rural exports strong and put food on our tables every day. Agriculture supports hundreds of thousands of Australian jobs and makes a significant contribution to Australia’s economy. In fact, a number of our agricultural commodities ranked in Australia’s top 25 exports in 2013, including wheat and beef ranking in the top 10.1

As Minister for Education, I am passionate about expanding education opportunities for people, whether living in the city or the bush. Australian university graduates on average earn up to 75% more than those who do not go on to higher education after secondary school. Over their lifetime, graduates may earn around a million dollars more than if they had not gone to university.

I recently visited seven universities in regional Australia to listen to the concerns of people in regional and rural areas about higher education, and discuss how the Federal Government’s higher education plan introduced in this year’s Budget will particularly benefit regional students and their communities.

Regional and rural students and their communities are among the big winners from our higher education plan, as more students will be able to access courses more appropriate to the needs of farmers and employers in the agriculture sector.

Our plan expands opportunities for apprentices and non traditional students, by providing $20,000 HECS style loans so that apprentices can be supported in meeting everyday costs through our new Trade Support Loans. Like university students, they won’t be required to repay their loan until they are earning a decent income.

Our plan will expand access to higher education opportunities to all Australians. For the first time ever, financial support will be available to all students in all higher education institutions, be they universities, colleges or TAFEs, and whether in the cities or the bush.

Our plan will create opportunities for 80,000 additional students each year by 2018 – including some 48,000 in diploma, advanced diploma and associate degree courses, and 35,000 in bachelor courses. These sub-bachelor courses mean students can undertake further education that can be used outright or as a stepping stone towards a university degree.

Our plan will strengthen the current Higher Education Loan Programme (also known as HECS) under which no Australian student need pay a cent up front. This means that the Government will continue to assist students with the costs of their education and no one will need to repay anything until they earn over $50,000 a year. We will also remove the unfair 20% loan fee for fee paying and VET students accessing FEE HELP and VET FEE HELP.

Freeing universities to set their own fees will encourage competition, leading to higher quality courses and more competitive pricing. Regional universities will compete with metropolitan universities on both the price and value of their courses, as well as on the cost of living and lifestyle. These institutions have the potential to not only excel but may see in increase in student enrolment.

When universities and colleges compete for students, students win. Not only will our higher education plan provide a boost to regional economies by ensuring there are more skilled workers, but regional education institutions themselves will be able to grow, employ more people and invest back into their local communities.

Universities and TAFEs are free to work together and tailor their education pathways so that they offer the skills and knowledge that local employers and communities are looking for.

For too long, people living in the bush have had limited choice in high quality education. This is an exciting time as we implement profound and necessary reform in higher education.

More information on the Australian Government’s higher education reform package can be found at www.education.gov.au.

Christopher Pyne was elected to the House of Representatives for the seat of Sturt in 1993. Christopher is the Minister for Education and Leader of the House of Representatives.

In his time in Parliament he has been Shadow Minister for Education, Manager of Opposition Business in the House of Representatives, Shadow Minister for Justice, Minister for Ageing, Assistant Minister and Parliamentary Secretary for Health and Parliamentary Secretary to the Minister for Family and Community Services.

Before entering Parliament, Christopher practised as a solicitor. Christopher is married to Carolyn and is the father of Eleanor, Barnaby, Felix and Aurelia.

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On a regular basis, anti-livestock groups like PETA, Voiceless and Animals Australia publish articles which claim, in effect, that if Australians substituted vegetable foods for the meat, eggs and dairy products they eat, then the nation’s greenhouse emissions would be cut dramatically. A recent example of this type of article was a letter to the editor of the *Australian Financial Review* by Jason Baker of PETA Australia on 13 May 2014.

Baker pointed out that about 10% of Australian greenhouse emissions are estimated to come from sheep and cattle that are raised for food. This figure was presumably obtained from the national greenhouse inventory published by the Department of Environment. The 2012 inventory, under Kyoto Protocol greenhouse accounting rules, that Australia’s emissions for 2012 were approximately 555 million tonnes of carbon dioxide equivalents, of which livestock emissions were 59 million tonnes, or 10.7%.

There are two fundamental problems with these claims. The first is that the authors obviously don’t understand greenhouse emission accounting rules, and the second is that they have not considered the flow-on effects of the removal of animal-based products from the Australian diet.

On the first issue, it comes as somewhat of a surprise to many people that estimates of greenhouse emissions calculated using Kyoto Protocol accounting rules do not reflect actual emissions added to the atmosphere. This is because the Kyoto Protocol rules are a reflection of international political compromises on which man-made greenhouse emissions will be counted and which will not. As a simple example, Kyoto Protocol rules ignore carbon sequestration occurring in trees that were planted prior to 1 January 1990, even though those trees continue to lock up greenhouse gases from the atmosphere every year.

The Kyoto Protocol emission accounting rules for livestock require that the greenhouse gases produced by sheep and cattle are estimated, but take no account of the greenhouse gases first removed from the atmosphere by the pasture these animals consume. As a result, official livestock emission estimates are effectively gross rather than net emissions.

Using more comprehensive greenhouse accounting systems (for example Life-Cycle Assessment) that estimate net, rather than gross livestock emissions results in a very significant apparent reduction in livestock emission estimates – in fact in some instances the result is halved.

Even ignoring this, a second issue arising from a change to a vegetarian, rather than an omnivorous diet is the flow-on emission implications of that change.

Animal-based foods make up approximately 33% of the calories consumed by Australians, so if they were substituted with plant foods Australians would increase consumption of plant-based foods by approximately 50% (because animal-derived foods have a higher nutrient and energy density than plant-based foods). This would mean that either the area of land in Australia sown to crops would need to expand (resulting in more greenhouse emissions from tree clearing, land cultivation and fertiliser use) or more plant-based foods would need to be imported into Australia from other countries, many of which have less greenhouse emission efficient production systems.

Each of these would result in additional greenhouse emissions, which would need to be factored into any calculations about the presumed greenhouse benefits of the dietary change.

There is also the question of what would happen to the land currently devoted to livestock grazing in Australia – much of which is unsuitable for cropping. Presumably, in the absence of sheep and cattle, a mix of kangaroos, and feral camels, goats and buffaloes would become the main grazing livestock. Despite goats, camels and buffaloes all being emission-producing ruminants like sheep and cattle, under Kyoto Protocol accounting rules emissions from these sources are not counted. So although official emission statistics might show a reduction in livestock emissions, the actual livestock-derived greenhouse emissions released into the atmosphere might change very little.

Even if domestic livestock were not replaced by feral animals, the unutilised pasture would result in more bushfires, producing greenhouse emissions. Kyoto Protocol emission rules currently only count these if the fire was man-made, and only count the emissions associated with the methane and nitrous oxide released into the atmosphere by the fire, and not the carbon dioxide. While the ‘official’ emission estimates might appear lower, the actual emissions released to the atmosphere would be significantly higher than this estimate.

The greenhouse emission benefits anti-livestock activists claim to be associated with vegetarian diets are highly speculative, and grossly overstated. If their real concern is global warming, they should focus on coal-fired electricity and vehicle fuel use which make up three-quarters of Australia’s greenhouse emissions.
Western Australian GM crops recklessly contaminated with ideology

A landmark case in Western Australia over genetically modified (GM) crop contamination has further emphasised the irrelevance of science in GM rulings. After a three week hearing, Justice Kenneth Martin ruled against Steve Marsh who had attempted to sue neighbour Michael Baxter after GM canola traced to Baxter’s crop was found on his organically certified property. Pending an appeal, Steve Marsh will be responsible for the financial loss incurred when the National Association for Sustainable Agriculture, Australia (NSAA) withdrew their organic certification in what Justice Martin described as an ‘unjustifiable reaction’.

The genetically modified ‘round-up ready’ canola found to be ‘contaminating’ Marsh’s field by the NSAA could not biologically cross-pollinate Marsh’s crop. Though Baxter won the hearing, the case demonstrates the limits of science in the organic industry. The verdict on the ‘organicness’ of crops is the preserve of the certifiers whether scientifically justifiable or otherwise.

Revenue losses like that of Marsh’s are derived from scientifically dubious standards open to misuse and monopoly. If ideology must take precedence over science, it is critical legislation at least be made consistent if matters of culpability and certification loss are to be kept out of the courts.

China’s sovereign wealth fund goes foraging for agricultural assets

China’s $650 billion sovereign wealth fund is looking to increase foreign agricultural investment according to Chairman Ding Xuedon. To date, Chinese capital has been leery of Australia agriculture. A joint report by KPMG and University of Sydney, *Demystifying Chinese investment in Australian agribusiness*, found less than 1% of farmland is currently under Chinese ownership. This may change as state-owned enterprises and private agribusiness chase returns and look to sure up supply chains. However, there is no guarantee Australia will be a major destination for agricultural investment. Chinese capital has shown a preference for competitor nations including the hypercompetitive New Zealand dairy industry. Developing nations, notably in Africa, have already received a greater share of Chinese agricultural investment. There is concern that Australian agriculture is losing its appeal to Asian investors.

To slow the decline in foreign demand the KPMG/University of Sydney report showed Australian agriculture should focus on its comparative advantage as premium producer. As China’s middle-class continues to rise, so too does the demand for nutrition and food safety. ‘Australia’s opportunity lies in meeting China’s food safety objectives – providing premium, fresh, safe foods: meats, dairy products, vegetables and wine.’

While growing nutritional awareness among China’s middle-class might not be the sheep’s back of 21st century agriculture, it may see Australia capture a greater share of FDI from sovereign wealth funds.

Marketing marketing

A Fairfax Agricultural Media Survey of agricultural producers revealed significant discontent with the administration and industry ROI of levies. The lowest satisfaction came from wool producers, currently paying $44 million on levies to Australian Wool Innovation (AWI).

Thirty-five per cent of producers surveyed rated the group’s performance as poor or very poor versus 23% good or very good. Tellingly, 35% of respondents to the question: ‘How would you rate the effectiveness of Australian Wool Innovation’s current overseas marketing focus on positioning Merino wool as a luxury fibre?’, answered ‘poor’ or ‘very poor’. Less than half that number at 17%, answered ‘good’ or ‘very good’.

In 2012 woolgrowers were given a vote to allocate AWI funding between on-farm R&D, off-farm R&D and marketing operations for the next four years. The allotted ratios are currently 25%, 15% and 60% respectively, suggesting there is recognition among woolgrowers of marketing’s value if not AWI’s specifically.

United States’ Clean Water Act changes raise farmers’ ire

Proposed changes to the United States (US) *Clean Water Act* by the Environmental Protection Agency (EPA) of the US Government have caused a ‘flood’ of criticisms from US farmers’ groups. The proposed changes would give the EPA power to protect what are referred to as ‘small waters’ – creeks and ponds that are not directly part of larger river systems that the EPA currently has responsibility for. The EPA claims its new powers would allow it to impose regulations on small waters only to the extent necessary to protect the quality of water downstream. However, farmers have expressed concerns that it will amount to the EPA requiring farmers to obtain licences to enable livestock to cross streams, or to be licensed to carry out normal agricultural activities close to any farm pond, drain or waterway, no matter how small.

The issue has arisen due to the findings of several court cases, where the EPA’s powers to impose its regulations over ‘waters of the United States’ (as the legislation specifies) have been challenged in relation to swamplands close to major rivers and smaller streams running into larger rivers. It has been pointed out that if legislators could actually make a decision that more clearly specified the EPA’s responsibilities, then the agency would not need to propose new ‘small waters’ regulations.
In the news

The Institute’s Funding Agriculture’s Future conference held in Canberra provided some fascinating insights into the reality of investment in Australian agriculture. The conference received substantial media coverage including: two articles by Vernon Graham, ‘Corporates can’t replace family farms: Sackett’ in The Land (10/06/14) and ‘Ag needs $180b: Taylor’ in Farm Weekly (05/06/14); ‘Farmers and agribusiness have to learn to deal with “capital drought”’ by Rob Harris in The Weekly Times (04/06/14); ‘Chinese “trophy” buyers eyeing off Australian vineyards’ on the ABC’s Bush Telegraph (30/05/14); and ‘Investments in ag more than stack up’ by Mick Keogh in Beef Central (10/06/14) reprinted from AFI’s Ag Forum blog.

An open letter written by ‘Bill Farmer’ from the Institute to celebrity fitness trainer Michelle Bridges also stirred up a fair bit of controversy. The ‘open letter’ was in response to an opinion piece written by Bridges in the Sydney Morning Herald condemning ‘the cruel way we routinely treat the cows, pigs and sheep we eat.’ The letter first appeared on the Institute’s blog, was reprinted in the Stock Journal (27/05/14), and reported in subsequent articles, including ‘Bridges crossed on ag-gag laws’ in the Australian Dairyfarmer (27/05/14).

The open letter became something of a sensation, trending on Twitter and leading to a string of responses from farmers offering an open invitation for Bridges to visit their farms. As reported in Kerri-Anne Mesner’s article for the Rockhampton Morning Bulletin, ‘Fitness guru Michelle Bridges stirs up farmers’ (04/06/14):

Art4Agriculture Young Farming Champion Hannah Barber is one of many producers who’ve extended an invitation to Ms Bridges to share their stories. Gates are being open the television star in New South Wales including Ms Barber’s cattle property in Parkes, Tom Tourné’s sheep farm in Dubbo, Georgia Clark’s chooks at Lake Macquarie and Prue Capp’s horses in the Hunter Valley.

Out and about

Recently the Institute’s Executive Director, Mick Keogh, has spoken at:

- National Farmers’ Federation and Suncorp Bank Farm Finance Forum, Canberra
- 2014 Central Queensland Festival of Innovation – ‘Cultivating our Future’, Rockhampton, Queensland
- Campbell Town Show – Roberts Ltd Dairy Breakfast, Campbell Town, Tasmania
- Melbourne Institute 2014 Economic and Social Outlook Conference, Melbourne
- Rabobank Executive Development Program – Emerging Trends Panel, Macquarie Park, New South Wales
- North East CMA and Murray Local Land Services Risk Management in Agriculture Workshop, Wodonga, Victoria
- Rodwells Conference, Lancefield, Victoria
- Meat & Livestock Australia panel discussion on agricultural innovation, Sydney

The Institute’s Senior Research Officer, Adam Tomlinson, recently spoke at AFI’s Funding Agriculture’s Future Conference, in Canberra. The conference discussed the future investment needs of the agricultural sector and provided information on potential farm funding models. Richard Arnheim is the winner of the Institute’s recent new members promotion.

Upcoming events

The Institute’s Australian Agriculture Roundtable Conference will be held at the Park Hyatt Melbourne on 12 & 13 November, 2014.

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