30th November 2012

The Manager
Review into Agricultural Education and Training
NSW Department of Education and Training
GPO Box 33
SYDNEY NSW 2001

Dear Sir/Madam,

Re: Review Into Agricultural Education and Training in New South Wales

Please find attached a submission from the Dairy Industry People Development Council (DIPDC) on behalf of the Australian dairy industry to the Review Into Agricultural Education and Training in New South Wales.

NSW state government support for the agricultural sector is currently under significant restructuring associated in some cases with reductions in resourcing. The dairy industry is very concerned these developments will constrain the ability of the industry to improve the competency of people working in the industry and ultimately impact on the competitiveness of the dairy industry in NSW.

The industry recognises the inevitability of these trends in government support and has over a number of years actively supported and funded education programs (in the primary, secondary and tertiary sectors) along with complementary extension and industry development programs. In this context this submission provides the review with a number of recommendations which:

- Encourages consideration be given to thin training markets in the rural areas of NSW and the price sensitivity of courses and their impact on the demand, delivery and funding of VET courses to agriculture generally and the dairy industry specifically.

- Stress the importance to the dairy industry of VET teaching capacity that is relevant to dairy farm sector students and the need for innovative solutions that allow VET providers in NSW to access and/or build credible teaching capacity in thin training markets.

- Highlight the opportunities and benefits from the national delivery of VET units and courses to students in NSW and consideration is given to addressing impediments in NSW to national delivery in the context of a state funding VET system.

- Focus on the need to link activities across the education sectors as well as with complementary dairy industry programs with goal of improving workforce development and industry productivity.

- Suggests opportunities for the NSW government to partner with dairy industry to develop, co-fund and deliver workforce development initiatives. Those initiatives should include areas to recruit, train and retain skilled labour in the NSW dairy industry.
For further information regarding this submission, please contact Mr Ian Halliday, Managing Director, Dairy Australia on 03-9694 3760

Yours Sincerely

Lynne Kosky
Chair
Dairy Industry People Development Council

Ian Halliday
Managing Director
Dairy Australia
Review Into Agricultural Education and Training in New South Wales

Inquiry initiated by the Minister for Education and the Minister for Primary Industries and Minister for Small Business

Submission by the Dairy Industry People Development Council on behalf of Dairy Australia and the Australian Dairy Industry Council
EXECUTIVE SUMMARY

The Dairy Industry People Development Council is pleased to have this opportunity to respond to the Review Into Agricultural Education and Training in New South Wales.

The dairy industry sees the availability of both comprehensive education and training systems and skilled people as being critical to the ongoing growth of the NSW dairy industry and viability of regional communities within which the industry operates.

The Council has presented this submission on behalf of the Australian Dairy Industry Council (ADIC) and Dairy Australia. The ADIC is the national peak body for the Australian dairy industry and represents all sectors of the industry on issues of national and international importance. Its constituent organisations – the Australian Dairy Farmers Limited (ADF) and the Australian Dairy Products Federation (ADPF) represent the interests of dairy farmers and manufacturers, processors and traders across Australia, respectively.

Dairy Australia is the peak Australian dairy industry service body, and has an extensive understanding of the practical concerns of industry people, labour and training needs both in a pre farm gate and post farm gate sectors. As a leading Australian research and development corporation it works across the whole dairy value chain to initiate and support those activities that individual farm businesses or dairy manufacturers could not do on their own.

The dairy industry is one of Australia’s major rural industries ranking third behind the beef and wheat industries. In 2011 nearly 43 per cent of annual milk production was exported, supplying 8 per cent of world dairy trade generating $2.75 billion per annum in export income. NSW is an important part of the Australian dairy industry with around 800 dairy farms producing 12% of the national output of milk – the second largest production region outside of Victoria. There are a diverse range milk production regions across the state, focusing on year-round milk production servicing important metropolitan and regional fresh and product markets.

Australia has developed an established, competitive and well earned reputation as a producer of high quality dairy products. Medium term projections for export demand in dairy products is positive with prices – while remaining volatile - predicted to trade in higher ranges over the next five to ten years. There is potential for growth in milk production in Australia.

There are significant challenges for the dairy industry, especially in the farm sector including dealing with price and income volatility and the need to improve industry productivity. The availability of suitably skilled people is now a real impediment to
sustainable growth. Training and education are vital components to build the people capability of the industry. Significant industry funds are being invested in a range of programs to support people development in the industry. These initiatives are consistent with Commonwealth and State Government priorities.

Agricultural education and training have been and will continue to be critical to the ongoing development of people in the Australian dairy industry. There are significant shortages of skilled labour in the farm sector with the industry already implementing projects in an attempt to address the situation. A number of key points have emerged in our submission:

- For the dairy industry training and education are a means to an end. Training and education must support ongoing workforce development which is a key ingredient for improving industry productivity and ultimately improved dairy business competitiveness, profitability and sustainability.

- The People R&D Strategy is a critical component of Dairy Moving Forward (DMF) an industry initiative to develop a strategy and capability plan to guide the Australian dairy industry’s pre-farmgate RD&E. The industry over recent years has invested over $4.5 million per annum in a range of collaborative projects and programs that enhance the capacity of the education and training sectors and the delivery of people development extension projects. The establishment of the National Centre for Dairy Education Australia (NCDEA) as a national deliverer and preferred supplier of VET courses for the industry is of particular significance.

- Shortages of skilled labour are being experienced across the dairy industry, especially in the farm and farm service sector. Difficulty in finding appropriate workers as farm hands or assistant farm hands has been evident for some time and now the industry is reporting difficulties in finding competent farm managers. The cost to the sector of labour shortages is potentially high, for example staff turnover on farms is above average and is estimated to cost at least $30 million per annum. Many dairy farmers have limited personal experience as either employees or employers and this is believed to be contributing significantly to high staff turnover in the farm sector.

- The agribusiness sector servicing dairy farming provides a vital input to improving the productivity and profitability of dairy farms. There is now a critical undersupply of agriculture graduates to enter the sector with employers reporting they have employed environmental science graduates as the next best option. Feedback from the service sector also indicates there is little in the way of post graduate courses tailored to the needs of the dairy farming service sector.
• NSW along with other dairy states has a number of world class milk processing and manufacturing factories featuring the latest technology, plant and equipment. In addition to excellent facilities, the companies running these factories offer exceptional career opportunities for suitably trained personnel. Despite this, the companies consistently report an ongoing problem finding experienced staff with appropriate training, and often need to compromise on candidate selection criteria.

• A range of responses are available which should assist increase the supply of skilled labour to the dairy industry, some of which have already been implemented and could be expanded with additional funding. Others have been successfully piloted while some are still conceptual. While there are a wide range of potential solutions to address the widening gap between skilled agricultural labour supply and demand, the overarching need is to take a whole of industry approach to workforce planning and development. The dairy industry with its established industry body, networks and strong partnerships with state and federal government agencies is well placed to partner with government on workforce development initiatives.

• The dairy industry has high needs and expectations of the VET sector to deliver skills and work ready people for the farm, manufacturing and agribusiness sectors of the industry. However the dairy industry’s experience to date is that elements of market failure are emerging in the sector with the demand driven approach. Issues of particular concern to the dairy industry are “thin training markets”, price sensitivity to course fees and limited specialist teaching capacity, which all have the potential to lead to a sub optimal investment by dairy industry businesses in training and education. Current VET arrangements also impede the development of industry specific curriculum and the national delivery of some VET courses.

• In higher education agriculture, undergraduate programs delivered by universities are critical in preparing rural professionals for working in the service sector that supports the dairy industry. There is an urgent need to substantially increase the number of students undertaking undergraduate degree study in agriculture and expanding the range of options for rural professionals to undertake further dairy specialist tertiary education. Universities also play a vital role in research and development and the delivery of education through post graduate research programs.

• It is the dairy industry’s view that educational resources across Australia in both school sectors are inadequate to demonstrate the value of agriculture to the community and the potential for careers in agriculture generally and for the dairy industry specifically. In response to this concern the dairy industry provides
significant and ongoing resources and funds into supporting the delivery of teaching kits and materials in both the primary and secondary school sectors in NSW and more broadly across Australia.

- The decline in agricultural education is multi-faceted. From the demand side the agricultural sector has a poor image and often not seen as an attractive career, especially for young people leaving school. For dairy farmers and employees there are concerns with the cost and/or quality of courses as well as time available to participate in classes. From the supply side perspective, RTOs face thin training markets and struggle to provide quality courses, at what are considered by potential students reasonable prices. In the agricultural sector increasing competition between RTOs is compounded by competition from a range of other information and practice change programs targeted at farmers. The dairy industry has funded a range of initiatives to address some of these issues but impediments remain.

- In the dairy farm sector the relationship between informal learning, extension programs and VET programs is complementary but complex. From the farmers’ perspective the difference between extension and education is often clouded. In terms of improving farm productivity farmers often see limited value in credentialed education for themselves or their staff.

- Support for the agricultural sector from state governments across Australia (including in NSW) is under ongoing restructuring, generally associated with reductions in funding. The dairy industry is very concerned these trends will constrain the ability of the industry to improve the competency of people working in the industry and ultimately impact on the competitiveness of the dairy industry in NSW. The industry recognises the inevitability of these trends in government support and has over a number of years actively supported and funded education programs (in the primary, secondary and tertiary sectors) along with complementary extension and industry development programs.
RECOMMENDATIONS

The dairy industry in this submission would ask the review to consider the following nine recommendations:

**Recommendation 1 : (section 2.1)**
That the inquiry recognises the critical importance of linking the activities of the education sectors (primary, secondary, VET and tertiary) as well as integrating those educational activities with complementary industry programs with the goal of improving workforce development and industry productivity.

**Recommendation 2 (section 3.2)**
That the NSW government conduct a detailed study to assess the current and projected demand and supply of students required to support a high quality agricultural service sector in NSW. The study should also consider the strengths and weaknesses of current undergraduate programs and the opportunities and strategies to address the emerging shortfall of agricultural graduates. This study should also consider enhanced pathways both into undergraduate courses and post-graduation.

**Recommendation 3 (section 3.4)**
That the NSW government gives consideration to the preparation of a collective workforce development strategy and action plan for the dairy industry in NSW. The development of the strategy and plan would be done in partnership between the dairy industry and relevant agencies in the NSW government.

**Recommendation 4 (section 3.4)**
The inquiry considers opportunities for the NSW government to partner with dairy industry to develop, co-fund and deliver workforce development initiatives. Those initiatives should include areas to recruit, train and retain skilled labour in the dairy industry.

**Recommendation 5 (section 4.1.3)**
The inquiry recognises the importance of thin training markets and their impact on the demand, course pricing and delivery of VET courses. The NSW government gives consideration for the need for funding models that that reflect the higher cost of delivering training in thin training markets typically found in rural areas of Australia such as NSW.
Recommendation 6 (section 4.1.3)
The inquiry recognizes the price sensitivity of courses to many learners in the farm sector and the impact on the demand for VET courses in the sector. The NSW government gives consideration to options to mitigate against the price shock of rising VET courses fees.

Recommendation 7 (section 4.1.4)
The review recognises the impediments to VET sector teaching capacity in delivering VET courses in thin training markets such as NSW that meet contemporary industry needs and expectations. The inquiry gives consideration to options to allow VET providers to build appropriate teaching capacity.

Recommendation 8 (section 4.1.5)
The inquiry recognises the opportunities and benefits from the national delivery of VET units and courses to students across Australia. The inquiry gives consideration to options to address the impediments in the NSW VET sector to national delivery in the context of a state funded VET system.

Recommendation 9 (section 4.4)
The review recognizes the important links between agricultural research, extension and VET sector education and considers opportunities to better link the resources and efforts of the NSW government and the dairy industry.
1 INTRODUCTION TO THE DAIRY INDUSTRY

1.1 Industry Situation and Outlook

The dairy industry is one of Australia’s major rural industries. Based on a farm gate value of production of $3.9 billion in 2010/11, it ranks third behind the beef and wheat industries. In 2011 nearly 43 per cent of annual milk production was exported, supplying 8 per cent of world dairy trade. About $2.75 billion per annum is generated through dairy export income.

Approximately 2,700 people are directly employed on dairy farms in NSW representing a 22% increase over the last 5 years. Across Australia there are 15,500 people working in manufacturing plants. Related transport and distribution activities, service industries and research and development projects represent further employment associated with the industry.

Dairy is also one of Australia’s leading rural industries in terms of adding value through downstream processing contributing $12 billion annually to the nation’s economy. Much of this processing occurs close to farming areas, thereby generating economic activity and employment in country regions. ABARE estimates the regional economic multiplier effect to be roughly 2.5 from the dairy industry.

NSW is an important part of the Australian dairy industry with around 800 dairy farms producing 12% of the national output of milk – the second largest production region outside of Victoria. There are a diverse range milk production regions across the state, focusing on year-round milk production servicing important metropolitan and regional fresh and product markets. The major dairying regions include the whole coastal strip from Victoria to Queensland, the Riverina and the inland rivers regions surrounding Wagga Wagga, Bathurst to Forbes, Dubbo and Tamworth.

1.2 Challenges Facing the Dairy Industry

The future for the dairy industry is not without significant challenges. Two issues are worth mentioning; price and income volatility and the need to improve industry productivity.

Figure 1 shows the variability of farm gate milk prices and farm cash income over the last twenty years. This volatility in farm business conditions is operating at amplitude of two to three times the historical level. It is the result of a mixture of increasing climate variability (and emerging climate change) and global influences on pricing and input costs (such as the global financial crisis). It is likely that the volatile operating conditions of recent times will persist rather than dissipate in the medium
to longer term. Current retailer pricing strategies are only going to exacerbate this volatility.

Significant improvements in productivity are essential to reducing the impact of declining terms of trade and improving the competitive position of dairy businesses. Industry productivity (as measured by Total Factor Productivity\(^1\)) for the farm sector has at best been modest over recent years having not exceeded 1.2% per annum growth since 2003/04. If the industry is to take advantage of the positive outlook for dairy products and the potential to increase milk production it must arrest static levels of productivity change.

Australia with natural resources for milk production however a critical and limiting resource is the human resource (i.e. people). This is both a quantity restriction (for example the availability of farm workers) and quality, in particular people able to deal with the volatile and increasingly complex operating environment of the dairy industry. Training and education are vital components to build the people capability of the industry.

Figure 1: Variation in Farmgate Price and Farm Cash Income (Australian Dairy 1989 to 2009)\(^2\)

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1 Total Factor Productivity is an industry efficiency metric measuring the ratio of total outputs to total inputs.
2 DAIRY INDUSTRY INITIATIVES IN PEOPLE DEVELOPMENT
TRAINING AND EDUCATION

2.1 The Strategic Response to People Development

The Australian dairy industry has been working with partners for several years to identify and address national priorities, and take into account the RD&E requirements of the different dairying regions. Dairy Moving Forward (DMF) is an industry initiative to develop a strategy and capability plan to guide the Australian dairy industry’s pre-farmgate RD&E.

DMF recognises the developing complexity in the dairy industry requires an informed and educated industry. People who are better educated, with increased competencies in relevant fields and who have access to quality information demonstrably produce more from less. They also seek and find more opportunity amid complexity. Undeniably the dairy industry must commit to the development of general and specific capacities at the individual, company and organisational level. Important features include a national extension and education platform with an agreed competency and skills framework for industry development, supported by an industry “library of resources” and delivery capability.

Included in DMF is the People R&D Strategy4 which identifies strategic priorities and describes the current projects relevant to the people development area.

While the focus of this inquiry is on labour skills and shortages and education and training it is essential to appreciate these are just two (albeit critical) factors that need to be considered. For the dairy industry, training and education is a means to an end. The end point is a more skilled workforce and in particular committed people who have the capability and capacity to contribute to internationally competitive, innovative and sustainable dairy businesses.

Recommendation 1:
That the inquiry recognises the critical importance of linking the activities of the education sectors (primary, secondary, VET and tertiary) as well as integrating those educational activities with complementary industry programs with the goal of improving workforce development and industry productivity.

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3 World Bank 1999 Study; AgITo review
4 Dairy Australia, Dairy Moving Forward – Research, Development and Extension – Priorities for the Australian Dairy Industry, December 2010
2.2 Important People Development Projects

Recognising the importance of people development the dairy industry has over recent years has been investing over $4.5 million per annum in a range of collaborative projects and programs that enhance the capacity of the education and training sectors and the delivery of extension programs, these include:

- **Dairy Industry People Development Council**
  Providing strategic leadership to the dairy industry’s workforce development strategy.

- **Rural Innovation Research Group**
  A partnership with the University of Melbourne providing through a social science research base, input into the industry’s program design and evaluation.

- **R&D projects**
  Commitment through input into the programs and services of the education and training system of the latest knowledge of the industry.

- **Extension programs**
  Partnering with the public and private sector to provide extension services to farmers, leading innovation and embedding new technologies on farm.

- **The People in Dairy Program**
  Providing a people focused extension program to farmers including web based human resources tools, HR training for existing farmer advisors and workshops for farmers.

- **Picasso Cows and Discover Dairy**
  A range of resources that are made available to teachers and students in primary schools supporting curriculum related activities

- **Cows Create Careers**
  A national program providing support for school based connection between teachers and their local dairy industry with a focus on careers information.

- **National Centre for Dairy Education Australia (NCDEA)**
  The strategic partnership with the VET sector underpinned by an agreement between Dairy Australia, and eleven TAFE Colleges across Australia. The NCDEA is the national deliverer and preferred supplier of VET courses for the dairy industry.

- **PhD and other scholarships**
  Investments that attracts young people to specific fields of study and research in support of strategic priorities. The dairy industry has undertaken these initiatives to enhance the provision of dairy education and to respond to perceived gaps in the existing education and training provision. While these investments in part address some of the opportunities, more can be done to ensure that existing education activities complement industry development programs with the aim of supporting the needs of individuals, businesses and the industry.
2.3  The National Centre for Dairy Education Australia (NCDEA) – a VET Sector and Industry Partnership

The NCDEA has proved to be a critical joint initiative between the dairy industry and a number of RTOs across Australia and has significantly enhanced the quality of dairy education and training delivery in VET sector and the subsequent participation across Australia.

In 2005 the University of Melbourne withdrew from the provision of vocational training to the agriculture sector to concentrate on higher level education. With the support and funding from the Victorian Government the dairy industry formed a partnership with the VET sector underpinned by an agreement between Dairy Australia, and eleven TAFE Colleges across Australia.

This partnership has seen significant additional investment from Dairy Australia and GOTAFE. As such very high quality education and training curriculum products have now been developed by the NCDEA.

The NCDEA is a virtual organisation or “franchise” led by the industry, underpinned by the partnership between Dairy Australia, partner TAFEs across Australia to form the NCDEA alliance:

- In the pre farm gate sector, the alliance includes GOTAFE, Advance TAFE, Great Southern Institute (WA), The Skills Institute (Tasmania), TAFE SA (South Australia), Riverina, Illawarra and North Coast Institutes (NSW), Tocal College (NSW), South Queensland Institute of TAFE (Qld) and the Australian Agriculture College Corporation (Qld).
- In the post farm gate activity is led by GOTAFE from the specialist dairy manufacturing VET facilities at Werribee.
- By “partnering” the industry has leveraged a range of resources and programs to more effectively provide VET services that add value and are seen as credible by the industry.

The partnership with GOTAFE in Victoria has been critical to both the Victorian and interstate dairy industries as GOTAFE have had the scale and capacity to increase its commitment in line with industry demand. Trainers and programs developed by GOTAFE are perceived as being of higher quality and programs are more directly relevant to dairy farmers, dairy product manufacturers and the industry service providers as well as industry leaders. Partner RTOs outside Victoria have had the opportunity to lever off the learning resources and expertise developed by GOTAFE that have been jointly funded by Dairy Australia and GOTAFE. The industry has directly invested in:

- Developing and delivering dairy specific education and training curriculum across Australia including the support of e-learning delivery.
- Establishing and building strategic relationships with key bodies in the education sector.
- Developing and supporting effective NCDEA governance.
• Providing partner RTOs with access to dairy industry education and extension committees and Regional Development Programs (RDPs).5
• Developing and enhancing a national network of RTO providers.
• Providing industry responsive development and extension programs to complement VET programs.
• Supporting the development of dairy specific learning resources especially at higher level VET courses.
• Providing the NCDEA with access to highly quality industry credible trainers

The NCDEA model has assisted RTOs in building stronger relationships with the dairy industry both at a strategic and local or operational level. The dairy industry’s RDPs in dairying regions across Australia provide direct conduits to and from the local dairy farming community. Regional Education Committees established by the NCDEA draw directly on the RDP networks. Three RDPs cover NSW:

- **Murray Dairy** which covers the northern Victorian irrigation areas and the Riverina,
- **NSW Dairy** which includes the coastal strip from the far south coast to just south of Kempsey on the mid coast and the inland rivers regions surrounding Wagga Wagga, Bathurst to Forbes, Dubbo and Tamworth,
- **Sub Tropical Dairy** which covers the north coast of NSW and Queensland.

As courses delivered to the dairy sector are not able to be separately identified it is not possible to accurately assess growth in participation in dairy specific VET courses by state. However NCDEA estimates indicate student contact hours for dairy programs run by the NCDEA have almost tripled over the period 2006 to 2011 (see Figure 2).

![Figure 2: Student Contact hours for Dairy Programs Delivered by the NCDEA 2005 - 2011](image-url)

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5 Regional Development Programs are autonomous bodies sponsored and part funded by Dairy Australia in the eight dairy regions in Australia.
3 WORKFORCE DEVELOPMENT ISSUES IN THE NSW DAIRY INDUSTRY

Three sectors of the dairy industry need to be considered when assessing labour issues, the on-farm sector, the farm service sector and the post gate or milk processing sector. While all sectors of the industry are experiencing labour shortages the industry has given particular focus to addressing issues in the on-farm and farm service sectors as they are characterised by small businesses where it is appropriate to develop programs for collective industry action. The focus of the industry is to develop people capability and capacity of the industry of which physical labour shortage is one, albeit critical issue.

3.1 The Farm Sector

Dairy farming in Australia is shifting from an equity based industry to a labour based industry with a trend to the concentration of farm ownership on fewer larger farms, with a reliance on paid workforce. The progressive increase in herd size has seen a dramatic increase in the proportion of farms employing people other than family, moving from approximately 30% in 2004 to more than 70% by 2009. Dairy farms typically have 2 to 5 people working in the business.

Dairy Australia national survey data indicates almost 60% of dairy farms have attempted to fill a vacant position over the past five years and just over half of these farms had difficulty finding the right person. One quarter of these farmers said this resulted in a negative effect on farm performance. Some farmers are reported to have “just given up” trying to hire labour.

Specific feedback from dairy farmers in NSW indicates labour availability is variable. In some of the coastal areas it’s not regarded as a major issue, however in inland NSW and around the Hunter Valley it is significantly more difficult. However the common theme that emerges is most available labour will not be suitably skilled for basic dairy farming operations such as milking will require on-farm training and where available VET short course training.

The most often sited difficulty by NSW dairy farmers is getting reliable and skilled labour for milking. Many farmers report being forced to "make do" with underperforming milkers or to hiring milkers with not only no previous dairy experience but even no previous farming/agriculture related experience. The increasing value of milk quality incentives and non compliance price penalties makes the consequences of poor performance in the dairy shed ever more severe.

Difficulty in finding appropriate workers as farm hands or assistant farm hands has been evident for some time. The industry is now reporting the difficulty of finding competent farm managers. The demand for employees with high level dairy farm management skills will increase as herd size continues to rise, properties aggregate, corporate investment in dairy farming rises and ageing farmers wanting to pull back

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6 Dairy Australia, Situation & Outlook 2004-2009, Preliminary results from further analysis.
from active management of their business by employing a manager to carry the major workload.

Getting suitably skilled and committed people was not such an issue in the past when many farms were passed on to the next generation and the up-and-coming young farmers learnt the skills and practice of dairying from their family. The population of people who work on farm has become much more dynamic. Of the 25,000 people estimated to work in the industry, almost one-sixth of them (3,800) were recruited to farms during the past year.7

Retaining people in dairy farming is a major issue for the industry and is covered in detail in a recent research project funded by the Gardiner Foundation.8 Staff turnover or “churn” on dairy farms is typically high with industry surveys estimating that the average turnover rate of employees is 35% (measured as the number of employees who have left a farm job as a percentage of total employees). It is estimated that the annual exit rate out of the dairy industry is 15%. Although this is similar to New Zealand, in comparing this rate with other sectors in the Australian and international business sector, turnover rates are higher by over 10% with other sectors.9 A recent report10 has suggested that farmers possessing good people management skills are less affected by labour shortages.

The economic impact of labour shortages can be illustrated from a number of perspectives. Many dairy farmers have limited personal experience as either employees or employers. This is believed to be contributing significantly to high staff turnover in the farm sector. Staff turnover alone is very costly because of the expense of recruitment and training, loss of expertise and pressure placed on the remaining people; with estimates ranging from 50 to 150% of the employee’s annual salary, this is at least $30 million dollars if 2,000 of the positions above are replacements at the most basic level (at say $15,000 of costs per person)11. Potential loss of staff often leads to dairy farmer reluctance to investing in formal training for staff. The benefits of “getting people issues right” around sourcing and deployment of the workforce in the farm business can be significant.

Shortages of both the quantity and quality of labour available to the dairy industry (i.e. a skilled workforce) can impact on the productivity and profitability of the industry. For example conservative estimates from modeling in 2008 suggested that productivity improvements from better management alone can mean as much as $200 per cow profit on some farms. This becomes a sizeable figure industry-wide, for example it is worth $52,000 for a farm of 260 cows, approximately $80 million per year to the industry if achieved on one-in-five herds. It is difficult to do anything but a simplistic estimate of the benefit-cost of people interventions as few of the contributing factors (a healthy workplace culture, good working relationships etc) are measured. But the risks of not getting it right are highly visible and seen as premature exit of dairy farms, people and investment from the industry. Farm

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8 Nettle R, August 2010.
9 Skills Victoria, Workforce development plan for the Victorian grain and dairy industries, (SED Consulting), December 2010
10 Nettle R.
profitability, a smooth easy-to-run operation and the health and well-being of its people are incentives for owners of dairy farms to expand.

These costs and the potential benefits have been a powerful driving force for the dairy industry to establish and commence implementing the People RD&E Strategy.

3.2 The Farm Service Sector

The dairy farm sector has a dynamic service or agribusiness sector which now provides a vital input to improving the productivity and profitability of dairy farms. Suitably qualified staff with dairy expertise are critical to the agribusiness sector. There is ample evidence that an undersupply of graduates now exists in the agricultural sector.

A recent report suggests that universities are nowhere near satisfying the current agribusiness service sector with graduates. It is estimated that at best universities across Australia are only producing 700 agricultural graduates per year for a job market with an annual demand of more than 4,000.

As an indicator of the perceived demand by students and scale of offering, Table 1 presents the reported first round offerings for students applying for university places in Victoria and southern NSW in 2011. The extremely low number of applicants for agriculture programs is concerning. The final participant numbers, after acceptances, deferrals and other adjustments is not known, however the difference between environmental sciences and agriculture is stark.

The implications for the immediate future are bleak. To illustrate, using an estimated graduation rate of 70% gives an indicative 78 agricultural graduates available in 2015. This is in an environment of increasing rates of retirement of existing agribusiness advisors in the public and private sectors. This issue emphasises the importance of increasing the effort to promote agriculture as an attractive career option to secondary schools.

Employers report that they have employed environmental science graduates as a first preference, due to the unavailability of agriculture graduates, and then have invested significant resources to build their capability to be job ready. Feedback from the service sector indicates there little in the way of post graduate courses tailored to the needs of the dairy farming service sector. It is believed rural professionals are less likely to seek post graduate qualifications unless it can be paid for and completed as a part of their job. More support is needed from the tertiary education sector to provide such offerings for the industry.

There are potentially a broad range of reasons for this decline in the availability of suitable graduates however it is clear that specific and targeted strategies are required to increase the participation rate in University agriculture undergraduate programs and higher level VET courses.

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12 Pratley J, Professional Agriculture – A Case Study of Supply and Demand, Australian Farm Institute - Occasional Paper No. 12.01, Feb 2012.
Table 1: First Round offers for places in Victorian and Southern NSW Agricultural and environment University programs, 2011\textsuperscript{13}

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<th>Course Categories</th>
<th>Number of Programs</th>
<th>Total Offers</th>
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<td>Animal &amp; Veterinary Biosciences</td>
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<td><strong>Total</strong></td>
<td><strong>23</strong></td>
<td><strong>2967</strong></td>
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Recommendation 2
That the NSW government conduct a detailed study to assess the current and projected demand and supply of students required to support a high quality agricultural service sector in NSW. The study should also consider the strengths and weaknesses of current undergraduate programs and the opportunities and strategies to address the emerging shortfall of agricultural graduates. This study should also consider enhanced pathways both into undergraduate courses and post graduation.

3.3 The Manufacturing Sector

Each of the dairy states has a number of world class milk processing and manufacturing factories featuring the latest technology, plant and equipment. In addition to excellent facilities, the companies running these factories offer exceptional career opportunities for suitably trained personnel. Despite this, the companies both in NSW and more broadly across Australia consistently report an ongoing problem finding experienced staff with appropriate training, and often need to compromise on candidate selection criteria.

A specific example is in engineering. Companies are seeking qualified engineers who compliment their base qualification with an understanding of hygienic design for food processing equipment and also have sound business acumen skills. This mix is increasingly hard to find and manufacturers are looking at innovative recruitment practices in order to attract potential candidates. Even so, competition with other industries is making it increasingly difficult to find staff.

Around fifty percent of dairy manufacturing employees live in non-metropolitan or rural locations, as many products are processed close to milk producing areas. There is a barrier to many people choosing to relocate to rural and regional locations for work because of a perceived lack of service delivery - particularly in areas such as education. Attracting trade qualified staff such as electricians to these rural locations is especially problematic.

\textsuperscript{13} Victorian Tertiary Admissions Centre Web site http://www.vtac.edu.au
The need for unskilled labour in the sector is reducing as manufacturing processes become more automated. Manufacturers require flexible, multi-skilled employees who are able to build their skill base quickly. Up skilling through ongoing training is important. The post farm gate needs of the dairy industry are broad and incorporate a wide range of skill sets including Dairy Technology, Dairy Plant Maintenance, Transport and Logistics, Environmental and Risk Management, General Management. Many of these professions and skill sets require training accreditation to meet existing standards required by companies and customers.

Dispersed and thin markets in some areas create a problem for training service delivery to the dairy manufacturing sector. The industry has supported a national approach to dairy manufacturing training (as currently delivered by the NCDEA Processing) on the basis that a collaborative approach will ensure the survival of a training provider which has an appropriate level of depth and quality to meet the specific needs of the sector. As such the NCDEA focuses on training which is not covered by the general VET or tertiary sector. The later section on Impediments to National Deliver deals with issues associated with the national delivery of dairy manufacturing courses.

3.4 Options to Address Skilled Labour Shortages

This submission has already identified a range of reasons for declines in both educational services and the availability of skilled labour. To increase the supply of skilled labour to the dairy industry there are a range of solutions, some have already been implemented by the industry and could be expanded with additional funding, others have been successfully piloted while some are still conceptual:

- Cadetships and/or traineeships targeted at higher level VET courses (levels 5 and 6) to quickly develop skilled dairy farm managers. For example in 2013 Dairy Australia will provide four scholarships for vocational training in NSW with a total value of $10,000.

- An expanded range of post graduate courses and programs to support the development of rural professionals in the agribusiness sector.

- Improved regional and national data availability and analysis relevant to the dairy industry that covers career pathways, training and education services and workforce planning.

- Improved promotion of and support for career pathways into and through the dairy industry. Promotion projects need to be highly targeted focusing on successful programs to date and drawing on established industry networks in dairying regions. Promotion of dairy farm employment should emphasize the opportunity for wealth creation as well as wage returns.

- Examine closely the high turnover amongst assistant farm hands and farm hands and explore strategies for identifying high-potential employees and providing “funnels” into attractive career pathways.

- Empower dairy industry RDPs (such as Dairy NSW) and regional dairy education committees to take a local leadership role in workforce development. There are opportunities to develop regional networks of better practice farmers, service...
providers, employment and career service groups regionally to generate retention systems.

- Improve the staff management capacity of dairy farm owners and managers through initiatives such as funded mentoring programs for dairy farmers and their employee(s). Here the aim is to reduce the current high level of staff turnover.
- Enhance regional capacity to match employment demand and supply for both farm owners and managers and the service sector. This includes the development of specific regionally based projects.
- Continue to support programs to develop industry leadership capacity.
- Review and revise the criteria used to assess skills shortages for state and federal government assistance programs with a view to including dairy farm workers and managers.

While there are a wide range of potential solutions to address the widening gap between skilled agricultural labour supply and demand the overarching need is to take a whole of dairy industry approach to workforce planning and development. This needs to include the following attributes:

- Is undertaken at both the strategic and operational level with a whole of dairy industry perspective.
- Undertaken in partnership with the dairy industry using well established and well proven industry structures and networks.
- Incorporates rigorous analysis and planning to identify priorities and high pay off areas for action and investment.
- Incorporates monitoring and evaluation to track industry progress in improving workforce development and employment performance. This requires the collection of suitable workforce participation data.
- Has a focus on people and skills not just labour.
- Includes elements of recruitment of people into the dairy industry, skills development (including training and education) with the aim of maximising retention of people within the industry.
- Covers all labour categories and skill types within the dairy industry and at all relevant course levels of education.
- Considers the respective roles and responsibilities of government, industry and the individual (student or business) in terms of selecting and funding specific initiatives or projects.
- The end point for workforce planning should be specific projects that have reasonable prospects for funding and success. (The dairy industry’s experience to date is there are a number of skills development plans with priorities and strategies however they often fall short of specific actions and projects.)

Ultimately employment and training decisions are made at the level of the individual dairy business or the individual as a student. This highlights that any workforce
development plan understands the respective roles and motivations of government, collective industry action and the individual student or business.

Agricultural industries have a successful track record of collective industry funding and action in industry development including research, development and extension. The dairy industry is particularly well placed with established industry bodies and networks (including at the regional level the industry’s NSW RDP network – NSW Dairy, Murray Dairy and Sub Tropical Dairy) in strong partnership with state and federal government agencies. The collective industry provides a state government with a strong interface and connection to people and businesses on the ground and in the market place and is well placed to partner with government on workforce development initiatives.

The In2Dairy project is an example of an innovative dairy farm labour employment project piloted in south-west Victoria that demonstrates the potential of a collaborative regionally based approach to recruit and place people into ongoing jobs on dairy farms. The project was delivered by WestVic Dairy (a dairy industry RDP), in collaboration with other partners and involved:

- 10 days pre-employment training
- Identifying farms interested in taking on trainees
- Matching of trainees with suitable farms
- Ongoing support to both trainee and employer throughout the course of the traineeship

Forty two participants completed their pre-employment course training, 21 farmers have been involved in the project with 17 people ranging from teenagers to men in their 50s having now secured ongoing jobs on dairy farms.

**Recommendation 3**
That the NSW government gives consideration to the preparation of a collective workforce development strategy and action plan for the dairy industry in NSW. The development of the strategy and plan would be done in partnership between the dairy industry and relevant agencies in the NSW government.

**Recommendation 4**
The inquiry considers opportunities for the NSW government to partner with dairy industry to develop, co-fund and deliver workforce development initiatives. Those initiatives should include areas to recruit, train and retain skilled labour in the dairy industry.
4 EDUCATION AND TRAINING IN THE NSW DAIRY INDUSTRY

Underpinning the decline in some agricultural courses and facilities is the reducing demand from students. At one level the agricultural sector has a poor image and is not seen as an attractive career. This is particularly the case for young people (as well as their parents and career advisers) as they consider career options at school.

At the operational level in the VET sector many dairy farmers and employees have concerns with the cost and/or quality of courses. This is often compounded by other factors such as limited time available to attend courses, volatile incomes and impediments to structured learning.

From the supply perspective RTOs struggle to provide quality courses at what are considered by potential students at reasonable prices as they face thin training markets. This is compounded by the demand driven approaches and an increasingly competitive education market place where RTOs chase more profitable industry sectors.

Competition between RTOs for students for formal VET courses in already thin training market is compounded by competition from a range of other information and practice change programs targeted at farmers by groups such as Departments of Primary Industries, agribusiness firms, Landcare groups and industry development groups. From the farmers perspective these activities are seen as practical, short, sharp and to the point addressing issues of immediate relevance and importance.

As already outlined the dairy industry, through Dairy Australia, has undertaken and funded a range of initiatives, such as establishing the NCDEA in an attempt to address some of the issues associated with the decline in educational services provided to the sector.

The number of applications for university agricultural science courses is now very low. Agricultural science is a four year course in contrast to a three year natural resource management (NRM) or science degree. NRM and science graduates are readily finding employment in the agricultural sector with a shorter time at university and paying less HECs fees may well be contributing to the decline in enrolments in Agricultural Science degrees.

4.1 The VET Sector

The VET sector across Australia is quickly moving to demand driven models with the goal of ensuring training is more responsive to the needs of industry and individuals in a dynamic economy. The dairy industry has high needs and expectations of the VET sector to deliver skills and work ready people for the farm, manufacturing and agribusiness sectors of the industry. However the dairy industry’s experience to date is that elements of market failure are emerging in the sector across Australia with the demand driven approach and need more consideration as the models are implemented. Two issues of particular concern to the dairy industry are “thin markets” and price sensitivity to course fees which have the potential to lead to a sub optimal investment by dairy industry businesses in training and education.
4.1.1 Thin Training Markets

The dairy industry believes VET education, especially in the farm sector has characteristics of a thin training market where demand for VET services has been modest and delivery exacerbated by the geographic structure of the industry.

The dairy industry is located in rural areas of Australia with dairy farms often located some distance from regional towns. This is especially the situation for the dairying regions in NSW. As a consequence potential student numbers at any point of time are small or at best modest.

Demand for VET services in the farm sector has for a range of reasons been modest, however the operating situation of the industry is rapidly changing. Until recently the farm sector was dominated by the family operated farm business where management and labour came primarily from within the family with little reliance on employed staff. Dairy farmers have very much been self direct learners often with improvements in farm productivity being supported by free government and industry extension programs sometimes supplemented by short course of units of VET study. Dairy farm owners (as students) often seek units of study rather than a whole course.

As dairy farms have grown larger paid employment is increasing. However the numbers of employees on a medium size family farm are still small, typically less than three or four. Paid staff will generally have either specialist roles (such as milking) or are required to have generalist skills and so it is difficult to have structured roles with opportunities for ongoing formal training and work progression within the business.

There is no requirement for dairy farms to be registered or for farmers (or employed staff) to be formally credentialed. So unlike some industries where there are very high student numbers ranging from entry level through to professional, the dairy industry does not process the same volumes of students nor can it easily sustain the same breadth of training offerings, especially to the standard expected by the industry.

As a consequence of the thin training markets the industry has difficulty in providing sufficient student numbers to support the delivery of viable and high quality training courses that meet the expectations of the industry. This is an especially important issue outside Victoria in dairying regions in NSW.

Recognising the challenges of thin training markets the dairy industry has (as outlined in other parts of this submission) undertaken a number of significant initiatives such as the establishment and contribution of funding to the NCDEA.

Thin training markets in the dairy industry lead to a number challenges in the provision of VET activities to the sector especially by RTOs in NSW:

- RTOs often have difficulty in enrolling viable class sizes.
- Low class sizes leads to higher delivery costs per student.
• With limited student numbers, RTOs have limited capacity to support the specialist teaching expertise required to deliver the standard of VET programs expected by the dairy industry. This is particularly the situation for higher level courses. Within NSW course fees and internal NSW TAFE institute funding structures inhibit NCDEA partner RTOs in engaging industry credible specialists as teachers.

In some states (such as Tasmania) thin training markets are being addressed as a part of a state skills training plan for the dairy industry\textsuperscript{14}. Dairy Australia has provided an important support role in the development and implementation of the plan including brokering agreements between the relevant RTOs. A key aim of the plan is to increase participation in VET programs by students from the dairy industry.

Skills Tasmania has also agreed that the dairy training market is too thin for the funding of additional providers and agreed to exclude it from open competition. This strategy to deal with operating within a thin market is now working with both traineeship numbers increasing and non traineeship programs being serviced and supported by the dairy industry.

In the dairy manufacturing sector the dairy industry seeks to address thin national training markets by using NCDEA Processing to deliver national training programs specially tailored to the dairy industry (e.g. Certificate IV and Diploma of Food Science and Technology – Dairy; Vocational Graduate Certificate in Food Industry Management).

4.1.2 \textit{Price Sensitivity to Course Fees – The Pre-Farm Sector}

Price sensitivity to course fees is seen by the industry as a key impediment to increasing the rate of participation in VET courses, especially in the farm sector. Recent experience in Victoria illustrates this issue. NCDEA and the Victorian Department of Primary Industries have conducted price sensitivity assessments around key programs such as “Feeding Pastures for Profit”, a diploma level skill set. This analytical work indicates that a program priced at $250 per farmer is acceptable, $250 to $350 will have some impact and priced above $350 will significantly reduce participation. Feedback from dairy farmers (via the dairy industry’s Regional Development Programs) has confirmed these concerns.

As a consequence Dairy Australia has accepted these estimates as being valid and has, over the past 12 months, chosen to subsidise certain key industry programs (e.g. Feeding Pastures for Profit, Certificate 4) in order to allow farmers to participate and operate below the recognised price points.

4.1.3 \textit{Price Sensitivity to Course Fees – The Post-Farm Sector}

The post-farm sector has had longer engagement with vocational training. Industry experience is that larger milk manufacturing enterprises typically have both a greater capacity and willingness to pay the increased course fees. For smaller manufacturing

\textsuperscript{14} DairyTas & Skills Tasmania, \textit{Dairy Industry Skills Plan}, August 2009,
enterprises the capacity or willingness is less. An obvious impediment to manufacturers is the capacity and cost to find replacement staff or fund staff replacement during periods of off-the-job training. Such costs have been estimated by various employers as substantially higher than training enrolment fees.

Recommendation 5
The inquiry recognises the importance of thin training markets and their impact on the demand, course pricing and delivery of VET courses. The NSW government gives consideration for the need for funding models that that reflect the higher cost of delivering training in thin training markets typically found in rural areas of Australia such as NSW.

Recommendation 6
The inquiry recognizes the price sensitivity of courses to many learners in the farm sector and the impact on the demand for VET courses in the sector. The NSW government gives consideration to options to mitigate against the price shock of rising VET courses fees.

4.1.4 Teaching Resources

Learning resources and teaching capacity are key determinants of successful student learning outcomes. With funding from both the dairy industry via Dairy Australia and the NCDEA partner GOTAFE, high quality dairy relevant dairy farm learning resources for all VET levels are now available to all NCDEA partners across Australia. Supporting resources from agency and industry extension and development programs also complement these learning resources.

Teaching capacity to deliver VET to meet the needs and expectations of the dairy industry is now emerging as a critical constraint in the delivery of high quality industry credible courses. This is especially the case for AQF level 5 and 6 courses that require a high level of technical knowledge and experience in the context of the whole dairy farm.

The experience of the NCDEA in states such as NSW is that low student numbers often inhibit the capacity for NCDEA partners to either employ staff with the required expertise or course funding arrangements limit the ability of partners to engage specialist industry professionals (such as veterinarians and agricultural consultants) to deliver units to the standard expected by the industry.

For the post-farm gate sector, thin markets and funding restrictions have significant implications for the NCDEA Processing’s ability to financially support high level staff expertise (especially with salary level differences to industry), maintaining staff currency and relevance, as well as reinvestment in pilot plant and learning resources.
Recommendation 7
The review recognises the impediments to VET sector teaching capacity in delivering VET courses in thin training markets such as NSW that meet contemporary industry needs and expectations. The inquiry gives consideration to options to allow VET providers to build appropriate teaching capacity.

4.1.5 Impediments to National Course Delivery

In light of the above assessment of the key challenges to an effective training system for the dairy industry the NCDEA sees the national delivery of VET as a way to significantly improve the efficiency and effectiveness of training and education to the dairy industry. In the manufacturing sector the NCDEA has for many years delivered the full range of VET courses across Australia as the sole provider of services. In the farm sector with nine collaborating RTOs the progress is more challenging and consequently slower, however progress is being made.

E-learning is another rapidly emerging opportunity for the NCDEA to delivery training nationally to the dairy industry. In the manufacturing sector the NCDEA is well advanced with all specialist dairy courses and units now available by e-learning mode. In the farm sector GOTAFE (in Victoria) has developed on-line delivery option for a dairy specialist Diploma of Agriculture and Advance Diploma of Agriculture. For both sectors a significant impediment to national delivery is the context of state based funding arrangements.

The NCDEA Processing group, as the sole Australian provider of the Certificate IV and Diploma of Food Science and Technology (Dairy), is only able to access state funding under the Victorian training system. As such, funding of interstate students is financially supported by the NCDEA Processing group as an industry service. However, the capacity of such a business model is threatened by reduced funding rates in Victoria, and the limited capacity of customers to afford fee-for-service enrolment fees.

For the farm sector the NCDEA (through GOTAFE) has delivered the on-line Diploma and Advance across Victoria in 2011 and 2012. The on-line delivery of several units of study has been trialed with interstate partners. This approach aims for the cross delivery of units between RTOs in different states using e-learning. It seeks to get economies of scale with student numbers as well as access to specialist teaching expertise of each of the partners. The approach is presenting a range of technological and organisational challenges. In the context of state based VET systems there are a range of impediments around student enrolment and assessment as well as unit costing and funding.

Recommendation 8 (section 4.1.5)
The inquiry recognises the opportunities and benefits from the national delivery of VET units and courses to students across Australia. The inquiry gives consideration to options to address the impediments in the NSW VET sector to national delivery in...
4.1.6 **Appropriateness of Curriculum**

In 2004-2005 the farm sector of the dairy industry through national curriculum policy lost its capacity to establish dairy specific curriculum at all AQTF levels including course title. All that has remained is the Certificate III in Agriculture Dairy.

To meet the specific needs of the dairy industry the NCDEA and working from the ground up has constructed a map of what was perceived to be “everything that was needed to be known to manage or operate a dairy farm”. That then contributed to the construction of a list of skills and knowledge that was mapped to training package competencies. Dairy specific learning resources have now been developed for all units of competency. These learning resources are now available to all NCDEA partners across Australia.

The amalgamation of these training packages also results in lesser capacity to understand dairy industry participation rates by analysing course codes, as there are no designated dairy codes apart from the Certificate III.

The dairy industry would seek support for the creation of specific skill sets and other curriculum initiatives that meet the needs of specific agricultural industries as part of the continuous improvement process.

4.1.7 **Dairy Industry Observations of VET Delivery in NSW**

As already outlined the dairy industry through the NCDEA has provided substantial resources and time to support the VET sector in NSW, this includes specialist learning resources, regional industry education committees and links into the dairy industry. However the level of support from NCDEA alliance partners in NSW is variable. Several partners have made a strong commitment to service the dairy industry recognizing the potential to grow student markets and this effort is well regarded by dairy farmers in those regions. This leaves the dairy industry well supported with VET delivery in some NSW dairy regions but with very limited VET delivery (in terms of both quantity and quality of courses) in other regions.

NCDEA partners successfully supporting dairy regions appear to have a number of characteristics:

- A recognition by a RTO of the potential to grow the dairy industry VET market with a senior manager committed and passionate to work with the dairy industry.

- A focus on delivering quality courses that meet the needs of students and dairy farmer employers. This will include the use NCDEA specialist dairy learning resources in combination with industry credible trainers for course delivery. Look for flexibility in delivery options to meet the needs of students and their employers.

- The use of lower level courses (especially traineeships) to build their presence to potentially grow the market in both size and coverage or course levels.
• Active participation in regional and national NCDEA activities to build and then enhance their dairy industry networks.

Tables 2 and 3 give an indication of trends in dairy farm based students in NSW.

### Table 2: NSW TAFE Student Enrollments – 2008 to 2011

<table>
<thead>
<tr>
<th>Year</th>
<th>Illawarra</th>
<th>Riverina</th>
<th>North Coast</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>9</td>
<td>2</td>
<td>0</td>
<td>11</td>
</tr>
<tr>
<td>2009</td>
<td>0</td>
<td>2</td>
<td>32</td>
<td>34</td>
</tr>
<tr>
<td>2010</td>
<td>11</td>
<td>5</td>
<td>69</td>
<td>85</td>
</tr>
<tr>
<td>2011</td>
<td>19</td>
<td>0</td>
<td>63</td>
<td>82</td>
</tr>
</tbody>
</table>

### Table 3: NSW Course Level Student Enrollments – 2008 to 2011

<table>
<thead>
<tr>
<th>Course Level</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certificate II</td>
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<td>8</td>
<td>14</td>
<td>7</td>
</tr>
<tr>
<td>Certificate III</td>
<td>2</td>
<td>20</td>
<td>42</td>
<td>51</td>
</tr>
<tr>
<td>Certificate IV</td>
<td>8</td>
<td>0</td>
<td>7</td>
<td>10</td>
</tr>
<tr>
<td>Diploma</td>
<td>0</td>
<td>6</td>
<td>20</td>
<td>14</td>
</tr>
<tr>
<td>Advanced Diploma</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>TOTAL</td>
<td><strong>11</strong></td>
<td><strong>34</strong></td>
<td><strong>85</strong></td>
<td><strong>82</strong></td>
</tr>
</tbody>
</table>

4.2 The Higher Education Sector

The role of universities in providing education and training services for the dairy industry is complex and diverse. At one level universities play a critical role through their R&D and postgraduate programs in the generation of new knowledge and understanding that underpins the delivery of leading edge extension and education services by a range of agribusiness service providers. At an operational level through their undergraduate programs, their role and performance in directly providing agriculture education services that meet the needs of the dairy industry is mixed.

Less than five percent of people working on dairy farms have a Bachelor degree or higher, undergraduate degrees are not typically seen as a priority pathway to dairy
farm management in Australia. This is in contrast to the New Zealand dairy industry where a substantial number of dairy farmers and farm managers are tertiary educated. It raises the question why this is the case. Post secondary training in the dairy industry is dominated by the VET sector where one in four farm workers have some form of VET qualification. This probably reflects what is seen as the practical hands on approach of VET sector training aided by regional locations and flexible delivery.

Agriculture undergraduate programs delivered by universities are however critical in preparing rural professionals for working in the service sector that supports the dairy industry. This includes roles such as research and extension scientists, veterinarians, agronomists, nutritionists and farm business advisors.

For undergraduate education two issues are apparent to the industry, firstly the urgent need to substantially increasing the number of students undertaking undergraduate degree study in agriculture, and secondly expanding the range of options for rural professionals to undertake further specialist tertiary education to super-charge rural professional capacity. These issues have been discussed in more detail in the earlier section on this Farm Services Sector.

Universities play a vital role in research and development and the delivery of education through post graduate research programs. Of particular relevance to this inquiry is the emergence of the Elisabeth Macarthur Agricultural Institute (EMAI) at Camden as a dairy "hub" for the NSW dairy industry, not only for RD&E, but also potentially education. There is likely to be a significant ongoing research facility at the site as well as an increased extension presence that will include a number of industry organisations being domiciled at Camden (such as Dairy NSW and Dairy Connect). This critical mass and industry focus may provide opportunities for response to future industry needs including education and training.

### 4.3 The Primary and Secondary School Sector

It is the dairy industry’s view that educational resources across Australia in both school sectors are inadequate to demonstrate the value of agriculture to the community and the potential for careers in agriculture generally and for the dairy industry specifically. In response to this concern the dairy industry provides significant and ongoing resources and funds into supporting the delivery of teaching kits and materials in both the primary and secondary school sectors in NSW and more broadly across Australia.

The initial focus of the industry effort was to raise the understanding of the nutritional importance of milk and dairy products. In recent years this has been broadened to include elements to improve the understanding of dairy farming and dairy product manufacturing and the opportunities for careers in the dairy industry.

At the primary school level the dairy industry has developed and supported the delivery of programs such as Picasso Cows (which includes themes of Farm to Plate, Fuel for Life and Unbeatable Bones) and more recently the Great Wall of Dairy. These resources allow teachers to give their students a hands on experience of the dairy industry including the opportunity to visit a dairy farm and talk with dairy
farmers and other people who work in the dairy industry. Since 2008 these resources have been delivered to 450 primary schools across Australia including 116 schools in NSW with each school typically involving up to 30 students and 2 to 3 teachers in the project. The focus to date has been on dairy farming regions however the program has been expanded into metropolitan schools and will be across all states in 2013.

Cows Create Careers is targeted at secondary school students with a view to both improve student understanding of the dairy industry as well as giving an insight to career opportunities in the industry. Students have the opportunity to either rear two dairy calves for several weeks at their school or make camembert cheese.

This program has over the last twelve moths been delivered to 176 schools and more than 6389 students across Australia. Over 150 farmers and 150 industry advocates have volunteered their time to share their knowledge with students about a wide range of practical and professional career pathways, such as agricultural science, agronomy, dairy farming, nutrition, finance, manufacturing and dairy extension pathways. In NSW Cows Create Careers has been delivered to 45 schools with an estimated $90,000 input of cash and in-kind support (such as calf feed) plus unpaid input from industry volunteers such as dairy farmers, veterinarians etc. These programs have been targeted at dairy regions where hands on input from the industry are available and where we believe is the best opportunity to recruit students into the industry. Interestingly a number of supporting dairy farmers have subsequently had participating students approach them for a job on their farm.

The extensive evaluation undertaken of these programs has demonstrated the positive impact in improving students understanding of the dairy industry and potential career opportunities. The success of these programs is underpinned by industry input to recruit schools into the program and then support teachers with the hands on experience necessary for students to engage with and understand the dairy industry.

There are two critical impediments to the program. There is the ongoing difficulty of identifying and then engaging the appropriate person or teacher in a school to discuss the opportunities for delivery in their school, this can be frustrating and time consuming for our project officers. While there is potential to expand the program, especially into metropolitan areas, additional funding from the dairy industry is a critical barrier. The dairy industry would be keen to explore partnerships opportunities with NSW government.

An overview the primary and secondary school programs can be found on the following website http://www.dairyaustralia.com.au/Education-and-Careers.aspx. For more detailed information please contact Rodney Vile on rvile@dairyaustralia.com.au.

4.4 Extension and Informal Learning

As with most other agricultural industries, ongoing farmer learning has always been a critical part of farm productivity improvement and adjustment. Informal and self directed learning by dairy farmers has been supported by both extension programs and VET courses with the focus primarily being on the farmer as the business owner.
and manager. With the growth in dairy farm employees the VET sector has increasingly focused on delivering VET courses to current and potential dairy farm employees sometimes at the expense of the farm business owner. From the farmers perspective gaining knowledge for farm productivity improvement the difference between extension and education is often clouded.

The relationship between informal learning, extension programs and VET programs is complementary but complex. The dairy industry through Dairy Australia (and earlier organizations such as the Dairy Research and Development Corporation) has had a long involvement with extension activities. Some of these extension activities are funded and delivered in collaboration with other organisations such as state Department’s of Primary Industries while others in more recent years have been initiated by the industry itself (such as The People in Dairy Program). A number of the extension programs draw on the principles of education and indeed have incorporated structured VET units and courses as a part of the extension activities.

The establishment of the NCDEA as the industry’s preferred training provider has already generated significant benefits for the dairy industry and provides enormous opportunities for the future. There are however challenges in better linking extension and education activities to meet industry needs. Differing funding and organisational priorities in the two sectors often impede collaboration. The respective roles of the education and extension disciplines are still contentious between respective professionals.

Dairy farm extension (and often research) practitioners support not only the delivery of dairy extension programs but often provide input to formal VET programs both in course delivery and course development. The impending restructure and withdrawal of resources from the Department of Primary Industries in NSW is likely to have impacts on the delivery of VET programs in NSW and ultimately the learning outcomes for people managing and working on dairy farms in NSW.

In an environment of constrained state government support for both extension and VET sector programs in NSW, the recommendation earlier in this submission (Recommendation 4) becomes even more important. The industry has a strong belief that with a focus on work force development, the education and extension services supported by the NSW government should complement the industry development programs funded by the dairy industry. With a coordinated approach there is an opportunity to improve the efficiency and effectiveness of services delivered to the dairy industry.

**Recommendation 9**

The review recognizes the important links between agricultural research, extension and VET sector education and considers opportunities to better link the resources and efforts of the NSW government and the dairy industry.
5 CONCLUSION

The services resourced and delivered to the agricultural sector by state governments across Australia are under ongoing restructuring generally associated with reductions in funding. This appears to be the case in NSW for both the VET and extension sectors.

The dairy industry is very concerned that these trends will constrain the ability of the industry to improve the competency of people working in the industry and ultimately impact on the competitiveness of the dairy industry in NSW.

The industry recognises the inevitability of these trends in government support and has over a number of years actively supported and funded education programs (in the primary, secondary and tertiary sectors) along with complementary extension and industry development programs that directly impact on the NSW industry. In this context this submission provides the review with a number of recommendations which:

- Encourages consideration be given to thin training markets in the rural areas of NSW and the price sensitivity of courses and their impact on the demand, delivery and funding of VET courses to agriculture generally and the dairy industry specifically.

- Stress the importance to the dairy industry of VET teaching capacity that is relevant to dairy farm sector students and the need for innovative solutions that allow VET providers in NSW to access and/or build credible teaching capacity in thin training markets.

- Highlight the opportunities and benefits from the national delivery of VET units and courses to students in NSW and consideration is given to addressing impediments to national delivery in the context of a state funding VET system.

- Focus on the need to link activities across the education sectors as well as with complementary dairy industry programs with goal of improving workforce development and industry productivity.

- Suggests opportunities for the NSW government to partner with dairy industry to develop, co-fund and deliver workforce development initiatives. Those initiatives should include areas to recruit, train and retain skilled labour in the dairy industry.
6 ACRONYMS

ABARE – Australian Bureau of Agricultural and Resource Economics
ADF – Australian Dairy Farmers
ADIC - Australian Dairy Industry Council
ADPF - Australian Dairy Products Federation
AQF – Australian Qualifications Framework
EMAI - Elisabeth Macarthur Agricultural Institute
GOTAFE - Goulburn Ovens Institute of TAFE
NRM – Natural Resource Management
NSW – New South Wales
NCDEA – National Centre for Dairy Education Australia
RDP – Regional Development Program
R&D – Research and Development
RD&E – Research, Development and Extension
DMF – Dairy Moving Forward
RTO – Registered Training Organisation
TAFE – Technical and Further Education
VET – Vocational Education and Training
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Web links for references are included where available. For other reports contact Rodney Vile at Dairy Australia, 03 9694 3806 or rvile@dairyaustralia.com.au

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