

environmental scan of the agrifood industries



an industry in transition ...

2008



AGRI-FOOD
INDUSTRY SKILLS
COUNCIL

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It's increasingly recognised by economists and policymakers alike that historical data and past trends no longer provide a helpful indicator in predicting future skill needs. Leading OECD nations are shifting their focus to 'early warning' systems that detect the onset of trends and building their respective Vocational Education and Training (VET) system's capacity to respond with speedy, practical solutions once issues are identified. Environmental Scans have been conceived on this basis.

Based on real-time industry views and evidence from across Australia, the Scan aims to give readers a clear understanding of the factors currently shaping and impacting on agrifood workforce development and how Training Packages and the VET system more broadly are currently responding.

The Scan's contemporary insights and its immediacy of advice are what sets it apart from other reports in the VET system. For this reason, the Scan *is not* about re-creating already published statistics and economic analyses found elsewhere which, by their nature, are typically historical. Rather, a range of topical sources have been drawn on including industry, enterprise and governmental publications and websites, press releases, current affairs programs such as Landline and Insight, and most importantly, from on-going visits and conversations with producers and workers throughout the country and across our sectors who continue to experience firsthand the issues needing to be written about. Account has also been taken of comparative international developments.

Over the next three years, the Agri-food Industry Skills Council (ISC) will be formally resourced by the Australian government to work with enterprises to identify their skill needs. It will see the Environmental Scan become increasingly rich with grass roots intelligence, a growing source of contemporary data to identify the magnitude of issues, and become *the* most valuable direction setting document available to the system.

“ Australia’s training system needs to undergo a fundamental shift, from a system driven by the needs of providers and agencies seeking funding and subsidies, towards a system that responds to the needs of industry and the economy – and which provides graduates with more relevant qualifications and a better chance of securing a job. ”

Skilling Australia for the Future

an industry in transition...

It would be easy, and some would say predictable to introduce this Environmental Scan by dwelling on the worst drought on record, the impact of equine flu or the extreme climatic conditions our industry, and indeed our world continues to face. But to do so would be to sell short our industry and those that work within it. Despite the devastation caused by these and other factors, the old adage that adversity makes us stronger is nowhere more evident than in the agrifood industry.

Depressing headlines have until quite recently painted a bleak picture of our industry, and there's no doubt that people within agrifood and those connected to its sectors continue to do it hard, very hard. **But our industry is by its very nature 'a resilient bunch'**.

Adversity has and always will be accompanied by remarkable innovation; it forces us to quickly consider alternatives and become even more efficient with the resources and people that we have. We are an industry which actively embraces new knowledge and new skills. **Efficiency gains through new technologies and management practices**, achieved on the back of research and innovation, have enabled Australian agriculture to stay a step ahead of our international competitors – returning an average **productivity growth of 3.8% a year** over the last 20 years. We produce food for over 60 million people, and last year accounted for over **20% of Australia's total exports** worth over \$40billion. World population growth and urbanisation, most especially in South East Asia, are driving increased demand for our products and will see these export markets grow exponentially. The imperative is to ensure that the industry has the people and skills to meet and exploit these opportunities.

On a domestic front, agrifood industry continues to be the **lifblood of regional and rural Australia** directly employing over 880,000 persons throughout the nation.

Today the industry which we term 'agrifood' is **an industry in transition**, and at every level. From individual workers to entire sectors, significant change is occurring. Some such as seafood are

going through a period of unprecedented structural change with fishing licenses being bought back by the Commonwealth to reduce overfishing. Racing is slowly coming to terms with the consequences of Equine Influenza, recovery from which some say could take up to three years. Food and meat are responding to the demands of the 'conscientious consumer' and global food chains – the domination of which is reducing many producers to 'price takers'. Our workforce is the second oldest in Australia, and has lost tens of thousands of employees over recent years due to the drought and strong competition from other sectors for labour, indeed the meat industry in particular relies heavily on overseas workers brought in through the 457 visa initiative.

As an industry we are intertwined with the central issue of the day. Global climate change is the most severe and challenging factor facing our industry and affects our complete supply chain; it's the root cause of many issues outlined in the Scan and which we're often first to experience among our industrialised counterparts and competitors due to our already harsh climate. We have the chance to be environmental pioneers; not just by establishing sustainable practices in Australia but by diffusing that technology and knowledge to those emerging economies set to be the biggest emitters in the globe. **Never has our industry been of such strategic importance.** Never has our need for skills, capability building and workforce development been so critical.

It's widely recognized by economists and policy makers alike that historical trends and data no longer provide a helpful indicator in predicting where an industry will go; and no more so than in agrifood where we rely on a climate beginning to react without warning. The Environmental Scan is therefore an **'early warning system'** to the vocational education and training (VET) system's decision makers on what's happening in the agrifood industry right now, **the trends starting to filter through, implications for our workforce, and how the system needs to respond.** Over the next three years, the Industry Skills Council (ISC) will be formally resourced by government to work with enterprises to identify their skill needs. It will see the Environmental Scan become increasingly rich with grass roots intelligence, a growing source of bio-data,

and we believe, become *the* most valuable direction setting document available to the system.

When visiting farms, fisheries, stables, processing plants and other enterprises, we hear about issues from the people on the ground running the business, often with their own capital invested. We hear about chronic labour shortages, often years before government identifies them in statistics. We also see the extraordinary pace of technology adoption and at the same time, the growing recognition that technology can take us so far but must be matched by higher level skills and knowledge within the workforce, and resolving the issue of labour supply. Its clear from these conversations that there is a need for fundamental change in the VET system if it is to successfully deliver skills to our industry. It has led us to make brave statements on a number of fronts and will no doubt stir views from all quarters; but debate is healthy and much needed given existing practices have simply not worked.

This Environmental Scan captures **'what we know'** and more importantly **'what it means'** for our industry. As a short sharp document, we don't claim to have captured everything that's happening across our industries, but we do believe we've captured those things which will continue to impact on our industry over the next 12 months and which need a response from the ISC and the VET system more broadly.

If after reading the Scan you take away just **three key messages**, consider these:

1. Registered Training Organisations (RTOs) push to deliver whole qualifications, and the VET system's ideological commitment to whole qualifications as a means of funding and evaluating performance of RTOs, is at odds with the reality of how our industry actually acquires skills. Entry level for our industry is often a discrete set of skills built upon over time using an array of options, such as skill sets, on the job training and progressive recognition of skills acquired. A model which gives flexibility and choice, and enables training providers to legitimately deliver **incremental building blocks of skills** as well as full qualifications is paramount.
2. The absence of an effective funding model for training in rural and remote Australia

continues to be one of the single biggest barriers to effective skills development in the regions. Its now time to **conceive and pilot a contemporary funding model** which enables training providers to concentrate on what they do best rather than struggling on a daily basis to deliver training to our industries.

3. VET is a critical strategy within our industry's broader approach to workforce development. It is fundamental to attracting new workers, and providing higher skills to our existing workforce. It must, however, be delivered as part of an integrated business solution which enables the diffusion of research and technology, diagnosis of skill needs, structured training, business management and planning, and labour supply. In short, we need to bring together the organisations and initiatives that operate in this space and establish a systematic solutions driven approach to skilling the workforce.

These and other key directions are outlined in the Scan and brought together in a proposal for the **AgriFood Workforce Development Strategy** – an initiative long advocated by the ISC. It recognises that only an integrated, industry wide strategy will successfully address the skill needs of our sectors, their enterprises and our people. It recognises that our industry, and rural and regional Australia are mutually reliant on each other for their sustainability and growth, and that to overcome the many interrelated issues which stand in the way of our continued productivity we need national leadership.

I commend this *Environmental Scan* to you as a contemporary insight into our industries, their real time issues and what we need do to support their future. It's founded with the firm conviction that we are a progressive, proud and passionate industry with a strong future and the capacity to be a global leader not just in the quality of what we produce, but how we do so.

John Baker
Chair – AgriFood Industry Skills Council
February 2008

What we know ...

Agrifood industries are **responsible for over two thirds of Australia's landmass and natural resources**. With climate change and the environment set to be *the* major economic issue for 2008 and beyond, pressure will be increasingly brought to bear on enterprises to have world class, and in many instances world-first skills in environmental stewardship. Climate change and water security are reverberating throughout every aspect of the industry: enterprise productivity, consumer demand and the availability of natural resources.

Agrifood has lost many workers due to the drought and equine flu. With an economy operating at close to full employment these workers have easily found alternative employment in unrelated sectors such as minerals and energy resources, and often with more attractive employment conditions and career paths. Compounded by the fact it has the oldest average workforce, and the increasing population drift to major cities and coastal areas, agrifood faces severe difficulties in **recruiting and retaining workers** to maintain existing production levels and rebuild the workforce in those sectors now experiencing chronic skill shortages.

Growing consumer awareness of the environment and the impact of products is seeing '**virtue purchasers**' as an increasingly powerful group in Australia influencing what is eaten, how its produced and delivered to the market. Over a quarter of Australians now make 'virtue purchases' as evidenced by the concept of 'food miles', 'buying seasonally' and growth of organic produce.

Increased consumer awareness has resulted in the introduction of the **Australian Animal Welfare Strategy** and requires humane treatment of all animals. Adherence to the codes of practice is a necessity for individual operators from a compliance perspective, but also to satisfy discerning customers and markets.

Increased demand for fuel by developing nations, finite levels of fossil fuels, and the issue of **energy security** are all contributing to an increase in the cost of oil. For regionally based industries such as agrifood, the effects are dramatic and have significantly escalated production costs due to the transport required to move product to freight terminals, processing plants and markets.

In the search for alternative fuel sources, the global appetite for **bio fuel** is reshaping the nature of agrifood in the United States, European Union and Brazil. Agricultural based ethanol has global consequences with priorities of the world's car driving economies heading for collision with third world economies requiring grain simply as a subsistence diet.

Snapshot

Agrifood production and food processing account for around 880,000 jobs. Collectively the sectors produce food for 60 million people, and are custodians of over two-thirds of Australian's landmass. They generate some \$208 billion each year representing around 20 percent of GDP and more than a quarter of Australian's exports.

Agrifood comprises the major sectors of rural; seafood; meat; food processing and racing. Within these sit many subsectors including beverages, wine, pharmaceuticals, animal care and aquaculture.

Priorities

Higher skills and evolving job roles driven by the requirements of export markets, discerning customers and high levels of regulation

Attraction of un-skilled, semi skilled and skilled labour

Integrated solutions to increasing enterprise productivity that intertwine world class training, extension and research services

Innovation in production and marketing underpinned by world class research and development and the adoption of new technologies

Skills in: natural resource management, emergency pest and disease response, supply chain management.

While many question the capacity of ethanol to reduce emissions, the US policy on energy is currently driving commodity prices across the globe and witnessing significant increases in the price of feed grain and cropping land. Commentators suggest a ground swell of changing minds among those previously opposed to the concept of nuclear energy will see it as one of most debated issues throughout 2008.

The term '**agflation**' refers to increasing food prices, primarily due to increased human consumption and its use as an alternative energy source (bio fuel). The competitive nature of supermarkets should enable some of its effects to be absorbed, however, this competition has been questioned and an ACCC inquiry into the competitiveness of grocery prices will report in July 2008.

Australia's disease-free status is critical for the industry to remain competitive against low cost, high volume overseas producers, most especially in an industry where global chains and international buyers change suppliers at will. As overseas travel increases, the volume of trade and the number of export and import destinations continues to expand, so does the risk of incursion of exotic pests and diseases. Australia's systems for post border **bio security and quarantine** must remain world class if its reputation as the producer of fresh, clean and naturally produced food is to remain intact.

'**Knowledge drought**' is an issue facing agrifood worldwide with public investment in research and development in serious decline. Much of Australia's productivity in agrifood is attributed to better herbicides and pesticides, crop varieties, livestock breeding and management practices. Many of these advances are direct results of research and development which, faced with the challenges of growing global production from dwindling resources, will be needed more than ever.

... and what it means

Agrifood is highly integrated within, and therefore sensitive to the global economy. Industry's reliance on export markets and an increasingly discerning domestic consumer necessitates that companies and their workers manage multiple factors impacting on the product and its price point in the marketplace.

These factors are driving an increased investment in the skills and knowledge of the workforce. Everywhere we look across agrifood sectors **job roles are evolving** with people needing to be **higher skilled** and **across a greater breadth of functions**.

This level of **change is occurring within the most basic of agrifood jobs**, for example, pig farm hands are evolving into piggery technicians who typically manage feeding operations, monitor growth, insemination, animal health matters and scheduling resources. This change is also consistent with **technology improvements** in sectors such as viticulture where automatic pruning and harvesting machines are replacing the small army of seasonal workers that are increasingly hard to locate. The new technology needs smart viticulturists who can operate and maintain machines, as well as manage the logistics of grading and getting the product to market.

The publicly funded training system must respond to this reality and offer bite sized 'building blocks' of skills in addition to 'base qualifications'. Some would argue that this is already possible through 'skill sets' and even happening, but the reality is that it occurs in isolated pockets of excellence and due to the personal commitment of individual trainers finding 'ways to make the system work'. Much frustration is expressed by pro-active training providers at the funding regime and the system's ideological fixation with whole qualifications as the easily measurable currency for enrolment, funding and evaluation of a training provider's performance. Quite simply, how we manage the training system and 'offer' recognised training, bears little resemblance to how agrifood enterprises and employees need to acquire skills.

The pursuit of sustainable practices and maximisation of resources is also seeing a growing demand for higher level technical and science based disciplines essential to modern agrifood such as researchers, scientists, engineers, animal technologists and veterinarians.

Pathways between VET and higher education are critical if the industry is to recruit these workers and arrangements need to work both ways: enable technicians which have grown up with the industry to gain higher level research and science based skills; while conversely, enable researchers and scientists to gain hands on experience in the industry through VET qualifications.

industry environment

rural

What we know ...

Approximately 130,000 individual farming businesses exist in Australia – remarkably **99% of them are family owned and operated**. While the number of farmers has declined over the last couple of decades by some 25%, the amount of land dedicated to agricultural produce is largely unchanged, quite simply, there are fewer farmers but they're managing bigger enterprises. And it's a trend unlikely to halt with succession planning being atypical within the sector.

Increasing moves towards **'corporate cropping'** are also seeing high-powered investors and corporations buying up multiple farms in prime cropping country with the intent of achieving economies of scale and better utilisation of plant, human capital and infrastructure. While such large scale farms are few in number they contribute significantly and increasingly to overall production. The top 10 per cent of large farms (by value) account for around 60 per cent of agricultural output (value). Importantly, this scale of farming is starting to realise **real career paths** for those wishing to enter the industry and attractive job roles for those willing to gain higher level skills and qualifications.

In 2007 over half of the agricultural land in Australia was drought declared, with many parts in drought for their sixth consecutive year. While termed the 'one in 100 year drought' due to its severity, drought remains an unavoidable reality; only timing and duration are uncertain. The International Water Management Institute states that by 2050 a world population of nine billion people will see over seven billion experiencing **chronic to critical water shortages**; cities will consume half the world's fresh water reducing by a third the amount of water available for food production. The challenge for farmers is therefore increasing food production knowing that water supplies will continue to lessen, and at the same time **'drought proofing'** their operations ready for 'the next one'.

Climate change, seasonal variability and the environment remain overriding issues for the sector. Sustainable use and management of natural resources (land, water and vegetation) are now fundamental skills required at all levels of the workforce. Alongside, sit the skills and knowledge to support **climate change mitigation and adaptation strategies**, much of which will draw on the industry's capacity to attract and interact with scientists and researchers.

Agriculture is responsible for 17 percent of Australia's total carbon emissions. By the same token it now plants over 20 million trees a year. Illustrating that it's an industry in transition, **'carbon trading'** and the concept of carbon farming is now becoming an option for farmers wishing to diversify income streams and better manage the surrounding

Snapshot

The rural industry covers: rural production (commonly referred to as 'agriculture'); amenity horticulture; conservation and land management; animal care and management. In 2007, over 340,000 people were directly employed in the Australian agricultural sector – with an annual turnover of more than \$103 billion.

Amenity horticulture has been among Australia's fastest growing industries, closely linked to urban development and lifestyle. Employing some 125,000 people, it turns over \$6 billion annually.

Priorities

Chronic people and labour shortages – NFF suggests there are 50,000 unfilled jobs in agriculture. Modest projections are that 15,000 additional employees across the industry will be needed per year for the next five years to replace the workers that have left over the past five years

Integrated business solutions – diffusion of technology, innovation and skills in response to diagnosed business needs and as a 'complete package' of solutions

Chronic skill shortages – higher level business skills to enable strategic management of contemporary farming, and innovative planning models that ensure sustainable management of land, water and vegetation – natural resource management

High level technical skills to adopt and adapt available technology and world-clean practices

Skills in natural resource management for indigenous communities

resources. Involving the lease and sometimes sale of land to companies which plant carbon sinking trees, the same companies then sell carbon credits to other industries. What Australia decides to do on carbon trading will shape the nature of Australian agriculture.

The drought has witnessed many employees depart the industry, some of whom have been retrenched due to the failure of crops and downsizing of herds; others have left the industry out of choice and sought employment in higher paid industries. **Attraction and retention of the workforce** remains a critical issue for the rural industry and is directly tied to its ability to recover to pre-drought conditions.

Farming on the urban perimeters – not quite a sea change, but for many it's a choice driven by lifestyle, and a rapidly growing group. Often referred to as 'peri-urbans' some of these farmers are new to the industry and their understanding of pest and weed management, plant and animal disease pose real biological risks to commercial farms.

Genetically modified (GM) crops are commercially grown by more than 10 million farmers in more than 20 countries, including some of Australia's competitors. Inconsistent state and territory bans on GM crop production have prevented meaningful introduction of GM crops. Considerable debate continues but it is likely that the resulting products will become more widely accepted in Australia as they have in a number of other countries; most especially where there are increased nutritional and health benefits and where crops require less pesticides, need to be more water efficient, drought tolerant and resistant to climate variability.

Amenity horticulture has been one of Australia's fastest growing industries due to its close ties with urban development. It includes plant nurseries, landscaping and maintenance of golf courses and parks, and accounts for around 30 per cent of all agriculture workers. Climatic change and management of scarce water resources are witnessing the job roles within these sectors relying more and more on higher level technical skills and knowledge.

Another sector also tied to lifestyle and the community's growing awareness of animal welfare is **animal care and management** estimated to be worth in excess of \$4billion annually and growing. Including animal welfare officers and inspectors employed by organisations such as the RSPCA, local councils and port authorities, it extends to vet nurses, breeders and groomers.

... and what it means

Rural industries are becoming **increasingly sophisticated** requiring a highly skilled and educated workforce. In addition to traditional farming skills, producers must now have knowledge across a wide range of disciplines. Managerial capability is a major determinant of farm performance. Skills in water management, information technology, natural resource management, financial management, marketing, risk management and in the use of increasingly sophisticated machinery, are all paramount.

Consumer pressure on food manufacturers to assure their on-going quality of product is unrelenting. As supply chains become more established, so flows the requirement that formal quality assurance processes be adopted by primary producers, an expectation that is creating an increasing demand for skills in **quality assurance, Hazard Analysis Critical Control Point, handling and risk management**.

At the same time, many tasks previously undertaken by employees, such as fencing, harvesting, lamb marking, cotton chipping, tree planting and bookkeeping are now being undertaken by contractors, freeing up workers to apply **greater technical and specialist skills**.

Agricultural workers typically have less tertiary education than in other occupations. But this is changing with the agriculture sector experiencing stronger growth in education qualifications than the average growth by the rest of the workforce. It is however, still a low base and the fact remains that while qualifications may be the desired target, the workforce needs to obtain higher level skills through **incremental skills development**.



What we know ...

Australia produces food for over 60 million people. Strategically, it provides the country with a high level of **food security** by virtue of its capability to provide the vast majority of on-going nutritional needs of the population. Economically, improving technologies enable much of the industry's produce to be exported and landed into distant markets at a high quality – the sectors regularly accounting for over 15% of Australia's exports. Boosted by the increasing **westernisation of diets** in developing countries and its status as a disease free producer, it's Australia's largest manufacturing industry.

The multinational food manufacturers, food service companies and supermarket chains that dominate global food markets have immediate and powerful capacity to source their input requirements from anywhere in the world making competition between suppliers fierce and decisive, and delisting a continual threat. Individual producers have little power to influence the prices they are paid and are becoming 'price takers' rather than 'price setters'.

The pressure on manufacturers is increased by the growing pursuit of **'own brand' ranges** by the two major grocery retail chains. The private label tends to force the commoditisation of all but the most innovative or strongly branded products in high volume categories, with a resulting squeeze on profitability.

Three years of record high production of Australian wine since 2004 had resulted in considerable oversupply which could not be absorbed by international wine markets. However, recent drought, disease, frost, fire and hail has seen a 30% reduction in Australian grape production for 2007, with 2008 production also forecast to be down. On this basis, oversupply is likely to be evaporated in the next season. Again, climate change is set to impact due to uncertainties of future water supply, and the effect it has on production risks, yields, quality and selection of grape variety. With a reduced wine grape harvest projected by the industry for the next five years, **lower volume/ higher margin wines** are where the market would like to position itself but these markets need to be grown. Success 'must be measured by value and not volume'.

Organic products are the fastest growing food sector in the world. Sales in Australia are currently estimated to be \$500 million a year. With 2,500 certified organic producers, growth is projected at 20 – 30 percent per annum for the next decade.

Emergence of the **'conscientious consumer'** or 'virtue purchaser' is seeing buyers wanting to know more about the product, not just in terms of nutrition but all round

Snapshot

By definition the food industry includes pharmaceuticals and beverages (wine). It's Australia's largest manufacturing industry with total sales of around \$70 billion. It consistently accounts for more than 17% of manufacturing industry employment and involves over 7,750 enterprises and over 190,000 employees, 40% of which are located in non-metropolitan areas. Over 1,900 wineries and 7,950 vineyards add to this picture, although production is dominated by some ten national and international companies focussed on export and high volumes. The pharmaceutical sector employs approximately 15,000 workers and turns over \$8.8 billion a year.

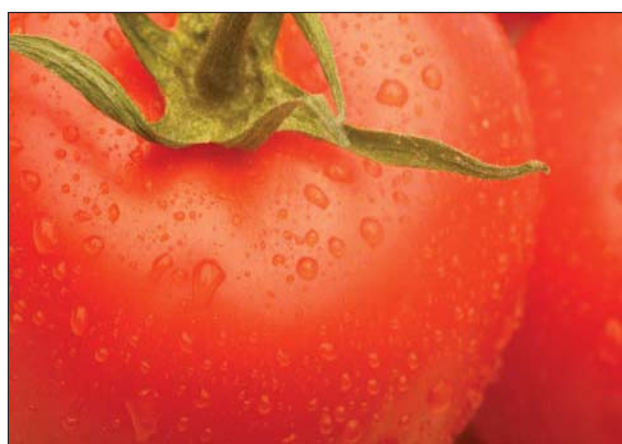
Priorities

- Higher level skills and job roles
- food safety, auditing and food technology
 - supply chain management and logistical skills
 - lean and agile manufacturing processes. Greater adoption and understanding of technology across the workforce
 - laboratory technicians and mechanical engineering trades

production values, such as 'food miles' or the distance food has travelled to reach the consumer as a proxy for the impact of the product. While an incomplete measure, the concept of eating locally and seasonally is becoming more important to a growing number of Australian consumers. Ethical compliance is unlikely to be a sustainable market advantage, but growing consumer expectations suggest it will be a basic determinant of staying in the market.

Food and pharmaceutical sectors are amongst the **most highly regulated sectors in the economy** due to their fundamental role in people's health and wellbeing. Regulation often sits at the three tiers of government (local, state and national) and not surprisingly results in poor consistency with much duplication and inefficiency as the flow on effect. While regulatory reform is underway, this too has implications and is witnessing a growing increase in the need for risk management and quality assurance skills throughout the workforce.

As an industry highly dependant on its **supply chain** and the availability of basic commodities, the drought has brought into sharp relief its vulnerability to crop failure and rising input costs. To compete within the market and maintain contracts, food producers must be able to assure on-going quality of their produce, the on-going and timely supply of goods and meet consumers' evolving tastes. Again, high level skills in risk management, food technology, quality handling and supply chain management to provide manufacturers with flexible options are being increasingly sought.



... and what it means

All of these factors dictate the adoption of **lean manufacturing** practices which, by definition, focus on the 'pull system' where goods are produced directly against customer orders. The philosophy aims to reduce or eliminate inventories, reduce waste and in doing so, release business capital. The perishable nature of much of the sector's product ensures that lean manufacturing is especially relevant and requires changes in attitudes, skills and practices in the workplace.

Innovative responses, both in terms of the actual product and how its manufactured and positioned in the marketplace will be a critical test for each enterprise in the sector. Timelines to test and prove new concepts are increasingly short; lead-times for 'refreshing products' are reducing. These factors have necessitated the sector becoming a significant investor in research and use of technology. While many of the technologies used are not necessarily new, their use is more widespread, and being made simpler to use, requiring a corresponding growth in the skills of workers required to use the equipment.

Innovation is also shaping the nature of the trades that work within the sector; traditionally engaged to maintain and install manufacturing plant, mechanical engineers and fitters are increasingly required to reconfigure and reconceive equipment to produce new products, within short timeframes and to produce optimum efficiencies.

There are big careers available in the food sector, both domestically and internationally. Despite this fact, the food processing sector finds it hard to attract workers, most especially technical and managerial aspirants. Food safety and food technology are significant roles in their own right due to the stringent requirements of export markets, increasing regulation faced by producers and awareness of consumers.

What we know...

Australia's fishing and aquaculture industries are worth over \$2 billion annually. The industry is undergoing a period of **unprecedented change** and adjustment to end overfishing, rebuild stocks and minimize the impact of fishing on the marine environment.

Australia has the third largest fishing zone in the world but the fiftieth in terms of the tonnes of fish produced. Our comparatively lower production of fish is in part due to surrounding ocean waters being typically low in nutrients or fish food, and that most major Australian wild catch fisheries have been heavily fished. Coupled with access rights being increasingly limited around Australia's coastline to make way for recreational fishing, Marine Protected Areas and rising costs of fuel to operate boats, the **industry must rely on high unit-value species** such as rock lobster, prawns, abalone and tuna to maintain profitability.

Recovery programs are in place. The Fisheries Structural Adjustment Initiative has witnessed a significant proportion of employees and individual fishing **businesses voluntarily exit the industry** or rationalise their business to remain in the industry. A third of the nation's 1600 licences were handed back in 2006 alone but restoring any level of resource will take some time.

For those that remain in the industry, ecosystem based fishery management (EBFM) is the key priority and end goal for the Australian Fisheries Management Authority and State government agencies responsible for Australia's wild catch fisheries. It considers the impact that fishing has on all of the aspects of the broader marine ecosystem, not just the target species.

To continually improve profitability, **seafood processors** will play an increasingly important role in managing the ongoing quality of produce, increasing the unit value of individual species through innovative processing and maximising the usage of by-catch.

Land and marine based **aquaculture** is the fastest growing primary industry in Australia, and the fastest growing food production sector in the world. The diminishing levels of world wild catch fisheries together with growing world population have led to the reliance on aquaculture as the means of meeting the world demand for fish protein and omega-3 fatty acids. Most Australian aquaculture production comes from the following six sectors: southern bluefin tuna, pearls, salmon, oysters, prawns and native finfish. Again, climate change stands to impact as large areas of coastal seas and lakes are becoming unfit for aquaculture due to sediment, nutrient and chemical leach from the land.

Snapshot

Comprises wild catch fishing, aquaculture and post harvest processing – its Australia's fourth most valuable, food based primary industry. About 9,000 commercial fishing boats operate in Australia.

The industry directly employs about 21,000 people in the catch and harvesting sector and 4,000 in processing.

A further 6,000 are employed in the aquaculture sector and contribute significantly to regional employment. It accounts for almost one third of the total gross value production of the seafood industry.

Priorities

Attraction and retention of people and quality crew in WA, SA and Nth Queensland

Aquaculture – biotechnology, biosecurity skills and knowledge, emergency disease response

Wild catch – skills and knowledge to support ecosystem based fishery management, such as handling and storage of by-catch

Skills in occupational health and safety are required across the industry as part of a structured approach to risk management

... and what it means

The wild catch and aquaculture sectors have matured dramatically in the last five years. In the wild catch sector, the bulk of formalised training had for many years related to regulatory compliance or licensing for specific job roles, such as coxswains or skippers. By necessity this is changing. Requirements of Australia's export markets and EBFM are seeing increasing numbers of companies seeking **higher level skills** in relation to more ecologically sustainable practices, for example, the storage and processing of by-catch for on-selling rather than its disposal overboard as waste. Marine aquaculture is set to become a highly sophisticated industry in its own right. The days where deck hands simply threw pilchards at tuna in sea cages have gone. The new breed are more technician focussed and deal with aquatic health issues, environmental management, quality handling

issues, feed and nutrition management, cold chain management, residue management as well as standard vessel operating functions.

The return of licenses in the wild catch sector has not created a pool of potential labour for aquaculture. Some have chosen to retire; others have become part of the urban drift, while a significant number have found employment in the resources sector. Capacity of the marine aquaculture sector to reach its potential will be directly tied to the **availability of suitable labour**.

In all cases, the **industry talks skills not qualifications**. It seeks a truly flexible system where skills are acquired incrementally to a Certificate II or III level with subsequent progression wrapped around what people actually do rather than ideological job roles. Delivery of skills, irrespective of enterprise scale, must be in bite sized chunks delivered at a time, pace and place conducive to the enterprise.



What we know...

The Australian meat industry is highly demand driven with customers placing ever increasing requirements on producers. Despite being a competitive market place, the industry services significant international and domestic markets and enjoys the **reputation of being a 'clean and safe' producer**.

Domestic red meat consumption continues to increase with consumer expenditure for 2007 estimated to be a record \$9 billion, up by \$366 million on the previous year. The industry strives to address consumer expectations in relation to product quality, food safety and value for money.

Primary export markets include the United States of America, Japan and Korea for beef and the Middle East and United States for sheep meat. All export is under the control of The Australian Quarantine Inspection Services (AQIS) and AUS-Meat. The *Australian Meat Industry Training Package* has been developed to meet these requirements, including the skills to address requirements of specific countries.

All stock processed in Australia is sourced domestically with livestock producers considered key stakeholders of the industry and relying heavily on the meat processing sector as a source of income. The emphasis on structured training for the meat industry extends to the livestock producers due to supply chain requirements of traceability, animal welfare and food safety to guarantee market access.

With the economy nearing full employment, **critical labour shortages exist in the industry**, with severe skills shortages in slaughtering, boning, slicing and butchery. The industry has responded with a range of strategies including:

- Nationally Recognised Training of unskilled employees
- importation of over 5,000 overseas workers on 457 visa skilled guest workers to fill existing vacancies
- specific strategies to reduce the relatively high rates of staff turnover in some sectors.

Restructuring of the Australian pork industry is making demands on training of skilled labour, particularly in the producer side of the business. Further processing will be affected by the changes in demand for labour with different skills levels. Competition from imported pork products will require additional boners and slicers in Australia and higher product processing knowledge.

Technological innovation in the industry is focused on information management, maximising yield and reducing OH&S risk.

Snapshot

By definition the meat sector includes: abattoirs, meat processing, meat retailing, small goods and food services. The industry consists of approximately 5,800 enterprises and approximately 60,000 workers which produce GDP in excess of \$16 billion per annum. About 10,000 workers undertake Australian Apprenticeships each year at Certificate II and III. A further 1,000 undertake higher level training supported by industry.

During 2006 – 2007 the industry achieved an 8% increase in beef exports to reach a record \$4.9 billion, with almost half of this coming from sales to Japan.

Priorities

Attraction and retention of workers to address chronic labour shortages training for slaughterers, boners and slicers – It is estimated that there are currently over 800 vacancies across the three job roles

Chronic shortage of butchers – a 2007 survey identified 215 vacancies for butchers and 178 vacancies for apprentice butchers.

Skills and knowledge to address national and international standards in meat safety, animal welfare and specific customer requirements

Availability of Nationally Recognised Training at all levels of the industry

... and what it means

While the meat industry is seeking to address chronic labour and skills shortages in the short term by importing skilled labour, the current availability of this labour is restricted, particularly for boners and slicers. In the longer term, the industry seeks to recruit, train and up-skill Australian-based labour but will necessitate access to additional training to reduce the reliance on imported labour and respond to the increasing demand for value added products.

The meat industry has invested in an **embedded training culture**, with a commitment to promoting career advancement within the industry. The current high turnover within the industry means that there

is an ongoing need to train workers on-the-job at Certificate II level.

Meat processing remains **one of most regulated processing industries in the world** with evidence of accredited training an important component of access to offshore markets. Meat workers at Certificate III are required to demonstrate that they have the skills to meet specific country or customer requirements including:

- religious slaughter
- multiple quality assurance standards
- AUS-MEAT standards
- traceability standards
- animal welfare standards
- environmental standards



industry environment

racing

What we know...

Australia has the **largest per capita racehorse population in the world** and shares the best stallions in the world due to its favourable and counter seasonal climate for breeding, and that these factors make it financially attractive to professional owners and breeders.

The impact of **equine influenza (EI)** continues to reverberate throughout the industry at all levels. Since reaching a high of some ten thousand infected premises in October/ November 2007, January 2008 has seen that figure reduced to less than one thousand premises and falling. Large populations of horses have fully recovered from the disease allowing the horse industry to participate more freely in horse sales and other events. Arrangements for the re-opening of Australia's export markets are progressing although Australia cannot be declared officially free of EI until a 12 month period of freedom from the disease can be proven. Interrupted breeding cycles are likely to change the dynamics of the industry for the next three years.

Labour shortages were already acute in a number of occupations prior to the outbreak. Perceptions of career opportunities in the industry are mixed due to the prevailing work conditions, the relatively high number of occupational accidents and its association with gambling. Career paths and employment conditions are limited due to the part-time or casual nature of many jobs. With lay-offs during the closure of race tracks, there are real fears that the industry will find it increasingly hard to attract back those workers. A chronic shortage of track riders is seeing a number of the larger stables using swimming pools and walkers to exercise horses in the interim, and bringing out workers from Eastern Europe and Asia.

An **increasing level of licensing and regulation** is being required for various occupations and is viewed as an integral strategy in improving the image and credibility of the industry. Jockeys, stewards, owners and track riders are all licensed.

... and what it means

Recruitment of jockeys and track riders is the number one growth determinant of the industry with urgent moves afoot to quantify the actual need among trainers in the first quarter of 2008. Most come to the industry with basic equine handling skills having been exposed to horses in a regional environment. With high levels of migration from rural to urban areas by young people, less potential candidates are coming forward with the required skills and of these, a declining number are willing to settle for a regional lifestyle or the male dominated culture.

Snapshot

The racing industry comprises three codes: thoroughbred; harness and greyhound – the 'code' being the breed and type of animal which competes.

The industry generates over \$10billion annually and creates around 92,000 full-time equivalent jobs. Small numbers of workers are centrally employed in permanent conditions (clubs), large numbers are self employed, part time or transient (trainers, jockeys, track riders, driver and stable staff).

More than 22,000 small/ medium sized enterprises make up the industry 95% of which are in non metropolitan Australia.

Priorities

Chronic skills and labour shortages in the areas of: track riders, farriers; localised shortages in jockeys and stewards; continuous requirement for horse handlers

Recent survey results from 238 trainers suggest 88% are experiencing difficulties in employing the services of track riders, 10% indicate they will close their business, and 27% will scale down their training operations if the track rider shortage continues

Improving the image and working conditions of the industry to attract and retain young people

Skills in: handling, driving, and riding horses, including occupational health and safety, and wider risk management issues particularly for trainers and race club employees. Small business management skills are also required to ensure compliance and good business practice

What we know...

The majority of factors outlined in the Environmental Scan are driving an increased investment in training, or rather a need to acquire new skills and knowledge in line with evolving job roles. Many bodies play a role in diffusing skills and knowledge into agrifood industries:

- Some operate as Registered Training Organisations under the Australian Quality Training Framework and deliver endorsed qualifications from Training Packages, some also offer customised fee for service training
- There are government instrumentalities providing training against licensing and regulation, government funded initiatives such as FarmBis¹, suppliers of equipment and produce, and a myriad of training providers and industry bodies not recognised under the Australian Quality Training Framework, but which nonetheless 'do a good job'
- There are also a number of Research and Development Corporations, and Cooperative Research Centres which in partnership with industry and tertiary institutions, inject much needed research and technological innovation into the industry
- In addition, there are 'extension programs' which for many years have been the typical method of transferring technology, research and development and diffusing new practices into the rural and regional industries.

There is clearly no shortage of bodies ready to impart skills and knowledge to the industry. There is, however, broad acknowledgement that the key to their effectiveness is their integration, and that this is how the VET system will achieve its greatest impact. Various pieces of work have sought to paint a coherent picture of

the organisations and initiatives that operate in this space; but it remains an ever shifting environment with things set to change again with the Commonwealth Government moving to abolish the FarmBis initiative.

Agrifood workforce development strategy ... the first step

As an 'industry in transition', the degree of change being experienced by the industry cannot be overstated; from individual enterprises and workers to entire sectors, significant change is occurring. Compounding the challenge is that in the not too distant past, factors which necessitated industries change their practices could take decades to impact. Today, with an economy that is financially and technologically integrated with all major global markets, these changes impact within months and sometimes weeks.

The extent of change represents a watershed for the industry and from a skills perspective we must do three things:

1. Clearly identify the skills and knowledge requirements of the industry sectors, their magnitude and urgency (Agrifood Industry Skills Council)
2. Undertake an analysis to identify existing initiatives and organisations, their objectives and reach in relation to industry's required skills and knowledge (Agrifood Industry Skills Council)
3. Establish the Agrifood Workforce Development Strategy (Figure 1) to ensure a systematic industry driven approach to skilling the workforce including articulation of industry's short, medium and long term priorities, key stakeholders' roles, collaborative strategies and resources (Skills Australia in collaboration with Agrifood Industry Skills Council).

... the keystone – a funding model for rural and regional industry

To acquire agrifood related skills through the vocational education and training system, individual learners and training providers find themselves having to 'work around' the existing system. Registered Training Organisations are typically resourced to provide training in rural and remote locations on the

¹ FarmBis is a state and Commonwealth Government initiative aimed at supporting primary producers to undertake business management and natural resource management training and skills development by meeting up to 60 percent of the cost. The initiative will be abolished at 30 June 2008.

same basis as for delivery in major regional centres or metropolitan areas, a financially challenging and unrealistic scenario. A greater complication is that the model for publicly funded training is based on the delivery of full qualifications; an emphasis reinforced by the fact that successful 'completions' of whole qualifications are a key performance measurement for Registered Training Organisations.

For many learners looking to update or broaden their skills in specific areas, this necessitates enrolling in a full qualification despite having little intention of completing, a practice not limited to agrifood areas but prominent in this industry. As a consequence learners within agrifood are often seen as 'non-completions' and reflect poorly on Registered Training Organisations' performance.

A further issue is the need to factor in real, pro-active recognition processes that identify a person's existing skills; both at a formative stage (prior to commencement of training to correctly ascertain 'the gaps') and ongoing. This is a fundamental requirement in agrifood where much of an employee's skills development occurs on-the-job and in many cases unbeknown to the training provider.

Recognition of a person's skills, sometimes referred to as Recognition of Prior Learning or Recognition of Current Competence, theoretically occurs as part of the training experience and is mandated through the Australia Quality Training Framework. In reality its conducted to varying degrees of rigour, cost and in some instances left to the individual learner to initiate and drive.

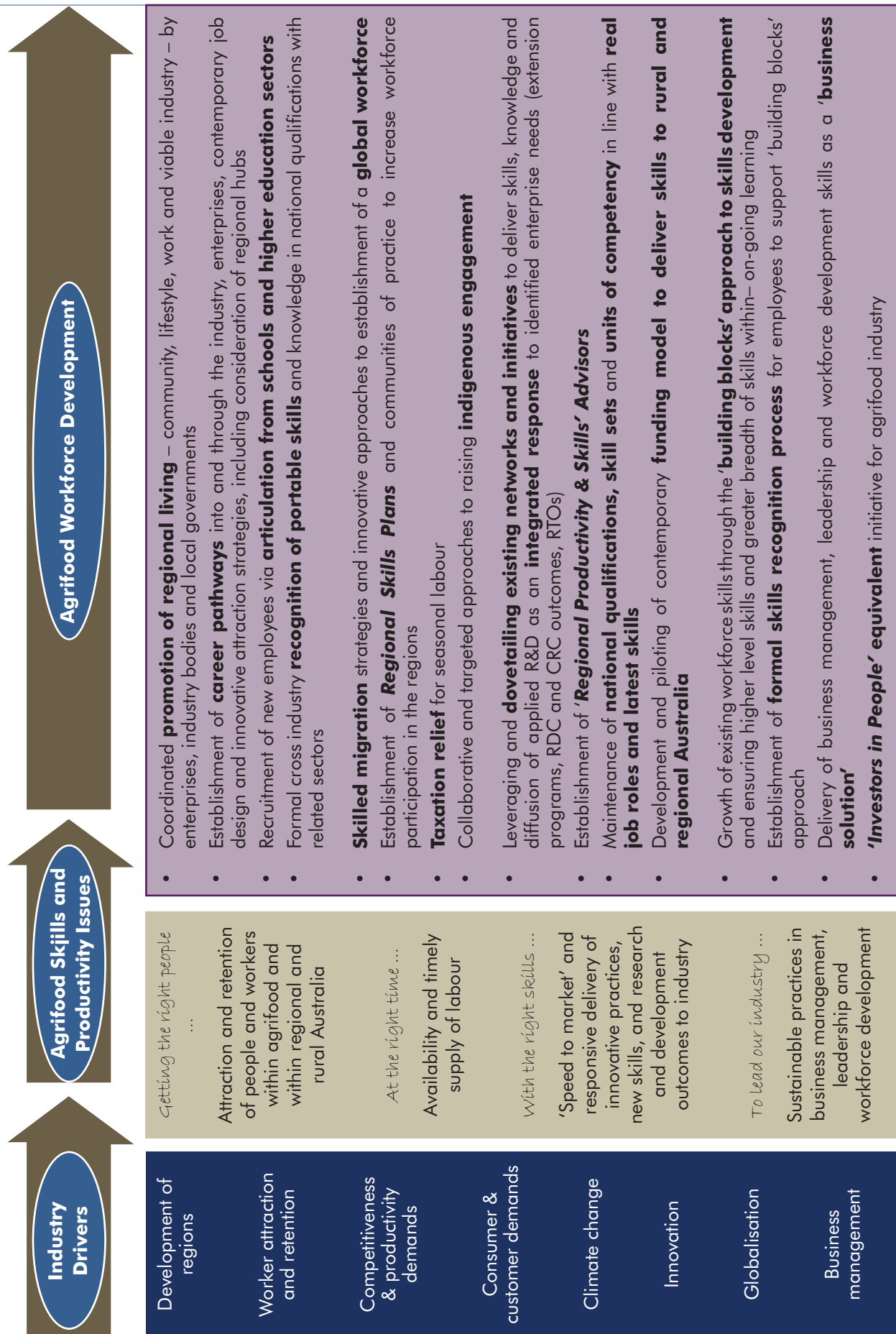
The time has come, and some would say long passed, for the system's ideology on whole qualifications to change and conceive a funding model for delivery of training to rural and regional Australia that both factors in the logistical issues surrounding delivery, and enables a contemporary 'building blocks' approach to skills development. Industry bodies and economists alike recognise that acquisition of higher and broader skills is an issue fiercely tied to increasing the nation's productivity, and that to do so requires the workforce to have access to incremental skills development. Its therefore important to recognise that while its a model being pursued by the agrifood industries, its founded on principles and drivers common to all industries.

It is recommended that *Skills Australia*, in collaboration with the Commonwealth Government, State and Territory Training Authorities, commission a pilot funding model for the delivery of vocational education and training that addresses the challenges of regional and rural delivery and enables incremental skills development.

It is recommended that *Skills Australia*, in collaboration with the AgriFood Industry Skills Council, establish the 'AgriFood Workforce Development Strategy' as a matter of urgency to drive a systematic, solutions driven approach to skilling the workforce.

Agrifood workforce development strategy

Figure 1. Drivers, issues and possible themes underpinning an Agrifood Workforce Development Strategy



improving skill levels to meet identified skill and labour shortages

When looking at workforce development needs it's important to differentiate between 'labour shortages' and 'skill shortages', terms which are frequently interchanged within the media and the VET system but which have very different meanings within agrifood, discrete causes and unique solutions:

- **Labour shortages** relate to those jobs where industry cannot recruit sufficient numbers of people to undertake the work. Labour shortages are being experienced across the agrifood sectors and particularly in rural and remote Australia for reasons already well documented. Labour shortages may apply to unskilled, semi-skilled or skilled job roles.
- **Skill shortages** typically relate to existing workers where over time, a job role or function has evolved and additional skills are required, possibly at a broader level or higher level. Skill shortages are being experienced by all sectors and virtually all job roles within agrifood.

labour shortages...

The ability to secure skilled, semi skilled and unskilled labour at competitive rates will dictate the long term viability of the agrifood industry. Immigration continues to make a major contribution to the industry historically and more recently as the economy nears full employment and agrifood sectors compete with other industries to attract suitable workers. Many overseas workers have entered employment through the 457 visa which has special concessions for regional

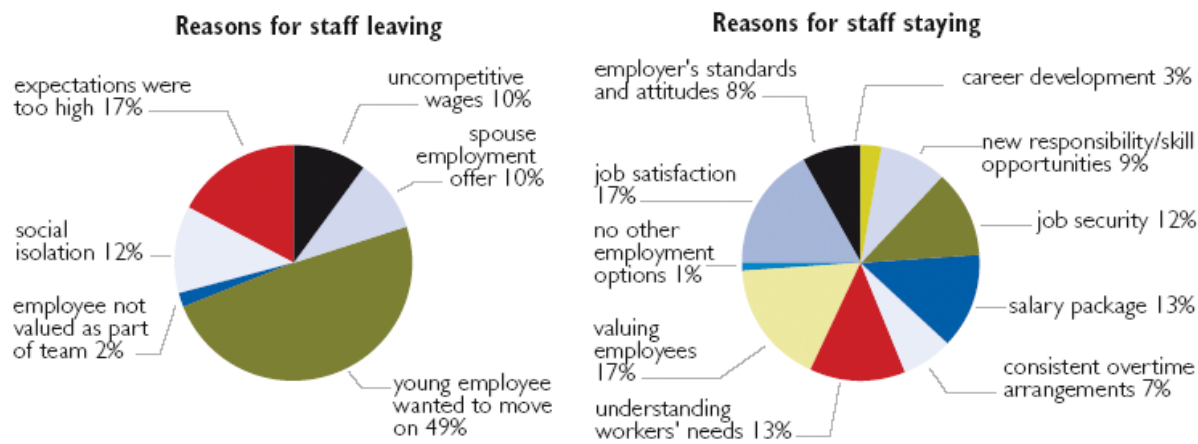
Australia, and is an option used by the meat and mining industry in particular. Clearly the resources boom has had a direct impact on the supply of labour to the agrifood sectors and there are now calls for impact statements on new mine or minerals projects to include the potential 'knock on' effect for existing labour and skills for local industry. This is especially important for regional and remote Australia where loss of people has the potential to decimate local companies.

The availability of unskilled seasonal labour is particularly important to agrifood, which struggles to find appropriate workers and in the numbers needed during harvest time. Working visas for overseas holidaymakers supported by revised taxation arrangements are required.

For Australian citizens, employment decisions within agrifood are based on a number of factors including remuneration, lifestyle, location, infrastructure and services – such as health and education – accommodation, employment opportunities for spouses and opportunities for social and recreational activities. Reversing perceptions of agrifood as simply a poor paying and declining industry are critical, most especially as these do not reflect the typical reasons of why people stay or leave the industry (Figure 2).

The resources sector faces many of the same challenges and while it capitalises on high levels of remuneration, it is seldom offers family friendly options. The advantages of life in rural and regional Australia for those which choose a job in agrifood, need to be promoted as part of an integrated workforce development strategy to get people into the regions².

² Addressing Skills and Workforce Development in Regional and Remote Australia – A National Strategy. Agrifood Industry Skills Council and Resources and Infrastructure Industry Skills Council (2007)



Source: Kondinin Group (2005).

Figure 2. Agrifood employee retention – why people stay and why they leave

Current labour shortage issues faced by agrifood include:

- rural and related industry (15,000 additional employees needed per year for the next five years to replace the workers that have left over the past five years and those retiring) – shearers, arborists, pest/weed controllers, farm hands & nursery hands, water technologists
- racing – track riders, stablehands, apprentice jockeys and farriers
- seafood – deckhands, skippers and marine engine drivers, aquaculturalists, process workers
- meat – slaughterers, boners, slicers and butchers
- food processing – food technicians, food safety auditors, process workers and bakers
- cross industry – business managers, research technicians and scientists, risk/quality managers, conservation and land managers/technicians, seasonal workers (capable of moving across sectors in line with harvest and processing peaks)

emerging and current skill shortages ...

Skill shortages are by their very nature complex to discern. At a **localised level**, they will **vary between employee and between enterprise depending upon the business model** and its level of exposure to key drivers, for example, regulation of the market it operates within. These tend to be **resolved over time**.

At a **national level** there are **factors which hit with severity, affect entire industries** and result in crucial skill shortages that need to be **responded to with urgency**. For example, the outbreak of equine influenza within Australia and Bovine Spongiform Encephalopathy (BSE) in America has brought into sharp relief how a lapse in quarantine can bring to a standstill an entire industry, and that skills in post border bio security are now a requirement across the board.

Between the two extremes are skills shortages brought about by sectors needing to **redesign job roles** to better assure productivity, for example, broader and higher level skills required of deckhands in the burgeoning area of marine aquaculture.

From conversations with industry, it's clear that the majority of job roles within agrifood are evolving in response to the many factors outlined in the Environmental Scan. It's important to understand that these job roles are evolving in two areas:

- **higher level skills** to not only complete the task more effectively, but to have the technical knowledge and understanding of the supply chain within which they operate; and
- **skills across a greater breadth of functions** to support and strengthen the purpose of the core role.

Over the next three years, the Agri-food Industry Skills Council will be formally resourced by the Commonwealth Government to work with individual enterprises to identify their skill needs and match their requirements to appropriate training solutions. This role will generate deeper, richer information at a more quantitative and qualitative level on skill and labour shortages, and will be used to update the

Environmental Scan on a regular basis. To do so, the Council will enhance its database and research capabilities. It will directly engage with representative clusters of enterprises in each sector to capture data on labour issues, evolving job roles, skill and training needs. The Council will also draw on data from sector and advisory groups where possible.

The Environmental Scan will provide Skills Australia with advice at a jurisdictional and regional level; importantly it will increasingly fulfil the Scan's

conceptual intent of providing the VET with an 'early warning system' on industry's skill needs.

Based on the ISC's work to date, research activities and ongoing consultation with sector enterprises, and other industry stakeholders, it's clear there are chronic current and emerging skills shortages across the various sectors (Figure 3). Where driven by legislation, access to markets and sustainability they are frequently 'urgent'.

MATURITY OF SKILLS SHORTAGE

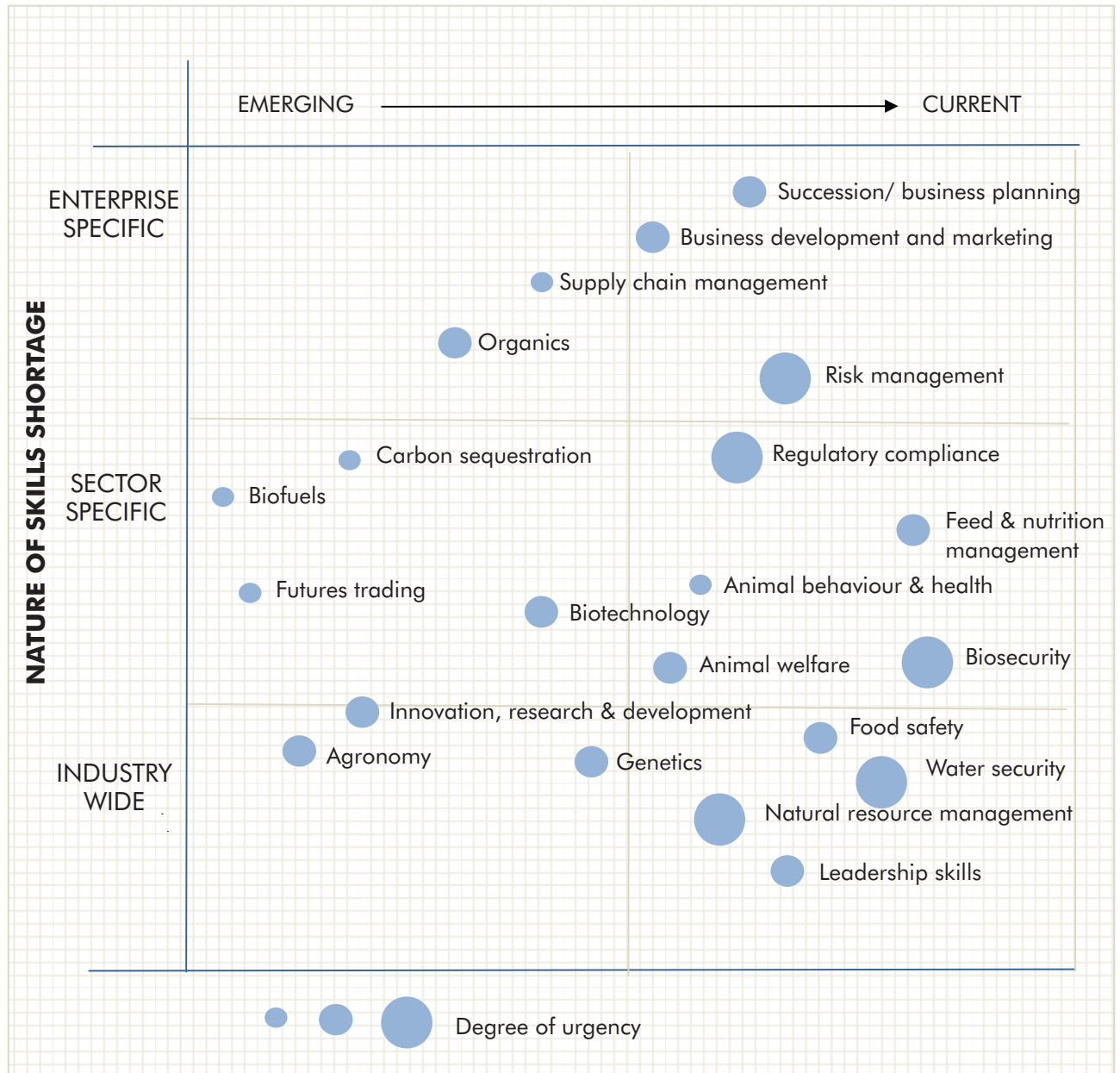


Figure 3. Agrifood skills shortages – current and emerging

current impact of agrifood training packages

section 3

formal delivery ...

The ISC maintains 10 Training Packages on behalf of its industries. The number of persons in training in 2006 indicates good support for the majority of Training Packages and a positive trend (Figure 4) but there are confusing signals with the number of apprentices and trainees for the same period falling across the industry by eight percent.

While the definition of 'persons in training' includes all learners enrolled in a Training Package qualification during 2006, the comparatively low completion rate across the sectors provides compelling evidence that full qualifications are not the intended outcome or chosen pathway by which skills are acquired by the majority of sectors.

| CODE | TRAINING PACKAGE | PERSONS 'IN TRAINING' 2006 | 'IN TRAINING' TREND FROM 2005 | COMPLETIONS IN 2006 |
|------|----------------------------------|----------------------------|-------------------------------|---------------------|
| FDF | FOOD PROCESSING | 15 085 | ↓ | 2 795 |
| MTM | MEAT | 13 310 | ↔ | 3 585 |
| RGR | RACING | 1 495 | ↑ | 310 |
| RTD | CONSERVATION AND LAND MANAGEMENT | 10 090 | ↔ | 1 135 |
| RTE | RURAL PRODUCTION | 24 230 | ↑ | 3 245 |
| RTF | AMENITY HORTICULTURE | 24 030 | ↑ | 4 035 |
| RUV | ANIMAL CARE AND MANAGEMENT | 4 995 | ↑ | 1 410 |
| SFI | SEAFOOD | 2 065 | ↔ | 460 |
| SUG | SUGAR MILLING | 140 | ↑ | - |

Data source: NCVET

Figure 4. Persons in training in 2006 by agrifood Training Package

unrecognised impact ...

How quickly and how extensively the agrifood industry has engaged with Training Packages is not well publicised or understood – the tendency being to make conclusions based on the amount of publicly funded delivery hours, enrolments and learner completions.

In specifying the skills and knowledge and experienced person must have to perform effectively in the workplace, Training Packages, or more accurately the units of competency, have multiple purposes as part of a more structured approach to workforce development. Capturing this data is fundamental to making informed judgements on skilling and how the VET system and its products must evolve to meet the needs of industry.

The following examples provide an insight into the role of Training Packages in business, the broader economy and community, and the extent to which training occurs outside of the publicly funded system.

Assuring community safety

Every food business in Victoria is required to have a Food Safety Supervisor in accordance with the Food Safety Act 1984. An estimated 40,000 food businesses are required to comply and routinely applies to food manufacturers, retailers, hotels and restaurants; organisations such as childcare centres, hospitals, hostels and warehouses must also comply. All supervisors are required to hold a Statement of Attainment for the food safety units.

Food Safety units are contained in the Food Processing Training Package

Underpinning workforce development

Training Packages are increasingly being utilised as a basis for job design and performance management. Department of Natural Resources (NSW) and Department of Environment and Conservation (WA) are just two organisations which have used the Conservation and Land Management Training Package to classify job roles for over 2,300 staff members.

Building social commitment

Green Corps provides young people with the opportunity to volunteer their commitment to conserve, preserve and restore Australia's natural environment and cultural heritage with over 85 percent located in rural and regional Australia. Participants achieve Certificate I or Certificate II in Conservation and Land Management as a minimum training requirement in addition to occupational health and safety, and first aid training. The program offers up to 1700 placements each year for young people between the ages of 17 – 20 years. Since the programme began, more than 18,000 young Australians have joined Green Corps projects across Australia; more than 14 million trees have been planted; 8000 kilometres of fencing has been built; and more than 5000 kilometres of walking track has been constructed or maintained.

Responsible practice

ChemCert Accreditation enables users of chemicals to meet all regulatory requirements for access to chemicals and comply with legislation. Aligned to the units of competency for chemical use in the Rural Training Package, the uptake demonstrates the typical approach to skill development of the industry but which remains outside of the national data collections due to its fee for service nature. As at April 2007, ChemCert Victoria had registered and issued Statement of Attainment for over 60,000 people against the program.

future directions for agrifood training packages

section 4

... a means to an end, but not the end itself

Pathways into and through the industry ...

Expansion of **pathways** and options for entry into and through the agrifood sectors is a key priority for recruiting new entrants into the workforce and up skilling existing workers. Entry level in agrifood is often through the acquisition of a discrete set of **skills that are built upon over time using an array of options**, such as skill sets, on the job training and progressive recognition of skills acquired. It may also involve Certificate I qualifications as a basis for VET in schools, working with indigenous communities and re-entrants to the workforce.

Using the same concept of incremental building blocks, existing workers need to be able to access sets of skills in response to a broadening of their job role, or update existing skills as a result of new practices or technology. This level of flexibility and choice, which reflects the real agrifood work environment, is paramount and the ISC will drive continuous improvement of Training Packages over the next 12 months on this basis.

Getting highly skilled people in the industry ...

Pathways between VET and higher education are critical if the industry is to recruit and retain skilled workers in higher level technical and science based disciplines essential to modern agrifood. These arrangements need to work both ways: enable technicians that have grown up within the industry to gain higher level research and science based skills; while conversely, enable researchers and scientists to gain hands on experience in the industry through VET qualifications. Priority pathways are in the areas of natural resource management, food science and technology, and agronomy.

Inclusion of new skills ...

New skills (units of competency and where appropriate, qualifications) will be added to agrifood Training Packages over the next 12 – 18 months and reflect the overriding issues impacting on industry:

- Bio fuels
- Futures trading
- Performance horse management
- Nutrient monitoring
- Pest and disease management
- Post border emergency disease response
- Irrigation efficiency
- Animal welfare
- Machinery GPS
- Managing personal finance
- Biosecurity
- Environmental management and sustainability
- Landscape design
- Bio diversity
- Wetland management
- Soil health and biology
- Bush regeneration
- Internal border quarantine
- Seed certification

Clarity of Training Packages ...

It would be fair to say that overtime, Training Packages in general, and specifically units of competency have become increasingly 'loaded' with additional information to facilitate delivery, and theoretically, ensure high quality assessment. As the 'endorsed' and therefore mandated requirements against which a training provider delivers, policy makers and in some quarters, industry have sought to use individual Training Packages as a vehicle to resolve systemic quality or professional development issues. Some Training Packages are quite literally 'bursting at the seams' with information to cover every eventuality, application and potential context within which they may apply.

Training Packages are at risk of limiting their relevance to industry and saddling RTOs with such complex documents that their intent is unlikely to ever be interpreted consistently and to the standard required.

AFISC has been the leader in reforming and simplifying Training Packages to make them understandable and directly relevant to industry and jobs. Its processes focus on empowering industry to participate in the implementation of Training Packages in collaboration with providers and a strong emphasis on using skills recognition as a fundamental component of the training process.

The Agrifood ISC has drawn a metaphorical line under each of its Training Packages and as a major piece of work throughout 2008 will overhaul all of its Training Packages in line with a very simple philosophy: that the units of competency will precisely define the skills and knowledge for particular functions; and that issues relating to training providers' contextualisation in different environments, implementation and undertaking assessment will be articulated into a series of 'Industry Guides' (Figure 5).

At the same time, qualifications will be designed with greater flexibility and enable employers and learners to better shape the outcomes to what the learner actually does within an enterprise.

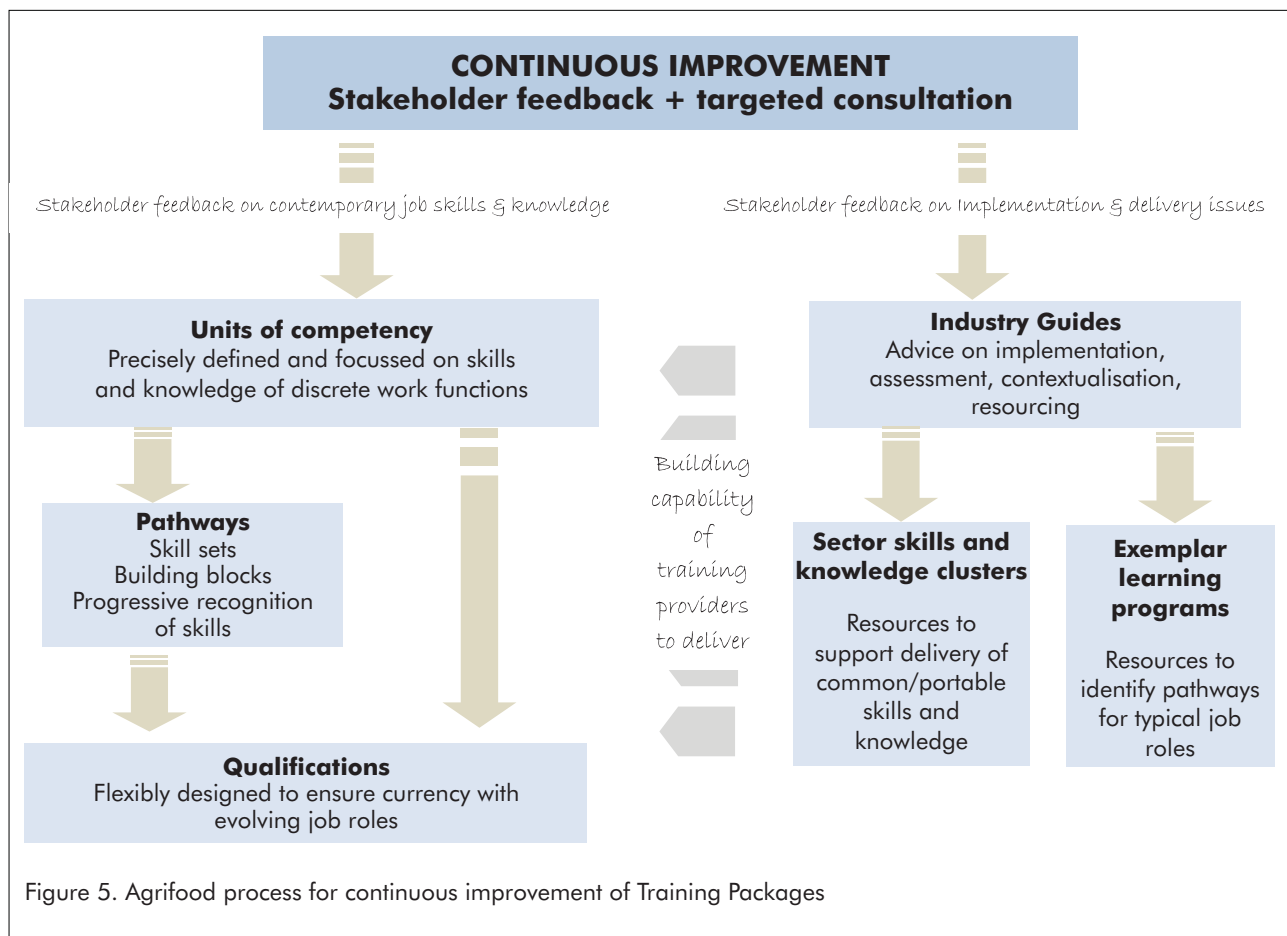


Figure 5. Agrifood process for continuous improvement of Training Packages

continuous improvement of agrifood training packages over the last 12 months

appendix a

During the last 12 months AFISC has completed and tested fundamental reforms to Training Packages, with an emphasis on simplifying their structure and packaging, and focussing on industry job-ready outcomes, implementation and support. This work has been done in collaboration with industry, government and training providers. These reforms will now underpin the final phase of Training Package reviews, which will be completed by June 2008.

| | |
|--------------|---|
| FDF03 | Food Processing Training Package Multiple changes details as follows |
| MTM07 | Meat Industry Training Package Multiple changes details as follows |
| RTE03 | Rural Production Training Package Multiple changes details as follows |
| AGF07 | Agri-Food Training Package Review in final stage |
| RTF03 | Amenity Horticulture Training Package Review in final stage |
| RUV04 | Animal Care and Management Training Package Review in final stage |
| SFI04 | Seafood Training Package Review in final stage |
| SUG02 | Sugar Milling Training Package No change |
| RGR02 | Racing Training Package Review in final stage |
| RTD02 | Conservation and Land Management Training Package Review in final stage |

FDF03 Food Processing Training Package

| Version and Date | Modifications |
|--|---|
| <p>Version 3</p> <p>September 2007</p> | <p>Addition of imported TAA units to replace former BSZ units in the Wine Sector qualifications</p> <p>Addition of two qualifications in pharmaceutical manufacturing:</p> <ul style="list-style-type: none"> • FDF40207 Certificate IV in Pharmaceutical Manufacturing • FDF50207 Diploma of Pharmaceutical Manufacturing <p>Addition of two qualifications in food safety auditing:</p> <ul style="list-style-type: none"> • FDF41007 Certificate IV in Food Processing (Food Safety Auditing) • FDF51007 Diploma of Food Processing (Food Safety Auditing) <p>Assessment Guidelines and Qualifications Framework text updated to conform to new requirements.</p> <p>Information to assist with implementation of the FDF03 Training Package has been placed in the Appendices of Volume I:</p> <ul style="list-style-type: none"> • Appendix One listing of all units grouped by AQF level within sector or functional group (this information replaces the former Table 18.) • Appendix Two Competency profiles. <p>Addition of four high risk food safety auditing Specialist units to AQF 4 and 5</p> <p>Addition of six new FDF units added to pharmaceutical manufacturing qualifications</p> <p>Addition of four pharmaceutical specialist units to the Certificate II in Pharmaceutical Manufacturing</p> <p>Revision and recoding of two pharmaceutical core units (GMP) at AQF 2 and 3</p> <p>Revision of two food safety auditing units</p> <p>Addition of seven imported units at AQF 4 and 5 to replace former BSZ units.</p> |

MTM07 Meat Industry Training Package

| Version and Date | Modifications |
|--|--|
| <p>Version 2</p> <p>September 2007</p> | <p>Addition of one unit to MTM10207 Certificate I in Meat Processing (Meat Retailing)</p> <p>Addition of three units added to MTM20307 Certificate II in Meat Processing (Meat Retailing)</p> <p>Addition of three units to MTM30807 Certificate III in Meat Processing (Meat Retailing)</p> <p>Deletion of two units from MTM20307 Certificate II in Meat Processing (Meat Retailing)</p> <p>Deletion of two units from MTM30807 Certificate III in Meat Processing (Meat Retailing)</p> <p>Movement of two units from compulsory technical units to optional technical units in MTM30807 Certificate III in Meat Processing (Meat Retailing)</p> <p>Superseded imported unit PRSSO206A replaced with HLTF301B in relevant qualifications</p> <p>Typographical, spelling, punctuation and grammatical errors corrected in all volumes</p> <p>Mapping of MTM07 Australian Meat Industry Training Package units of competency to MTM00 Australian Meat Industry Training Package units of competency (Vol I) updated.</p> <p>Units of competency in MTM07 Australian Meat Industry Training Package and their Pre-requisite Requirements updated</p> <p>AQF qualifications in MTM07 Australian Meat Industry Training Package: Qualifications Structures updated.</p> |

RTE03 Rural Production Training Package

| Version and Date | Modifications |
|--|---|
| <p>Version 2</p> <p>September 2007</p> | <p>Assessment Guidelines and Qualifications Framework text updated to conform to new requirements</p> <p>Addition of descriptive material relating to new sectors added to RTE03 (alpaca, beekeeping, deer production, emergency disease and plant pest response, fertiliser and soil ameliorant, mushroom production, olive production and organic production)</p> <p>Deletion of matrix of units from (former) Part F</p> <p>Addition of four qualifications in commercial composting:</p> <ul style="list-style-type: none"> • RTE20807 Certificate II in Commercial Composting • RTE32107 Certificate III in Commercial Composting • RTE40707 Certificate IV in Commercial Composting • RTE50507 Diploma of Commercial Composting <p>Addition of 13 new units to commercial composting qualifications</p> <p>Addition of 14 imported units from other Training Packages into the commercial composting qualifications</p> <p>Addition of new suggested pathways for specialisations:</p> <ul style="list-style-type: none"> • RTE20103 Certificate II in Agriculture, pathways added in alpaca and beekeeping • RTE30103 Certificate III in Agriculture, pathways added in alpaca and beekeeping • RTE40103 Certificate IV in Agriculture, pathways added in alpaca, beekeeping, deer production and organic production • RTE50103 Diploma of Agriculture, pathways added in beekeeping, deer production and organic production • RTE20603 Certificate II in Production Horticulture, pathways added in mushroom production and olive production • RTE31603 Certificate III in Production Horticulture, pathways added in mushroom production and olive production • RTE40503 Certificate IV in Production Horticulture, pathways added in mushroom production and olive production • RTE50303 Diploma of Production Horticulture, pathways added in olive production • RTE31903 Certificate III in Rural Operations, pathway added in fertiliser and soil ameliorant operations <p>Addition of one new qualification with a suggested pathway page:</p> <ul style="list-style-type: none"> • RTE60307 Advanced Diploma of Production Horticulture specialising in olive production <p>Addition of one new unit to RTE10103 Certificate I in Rural Operations</p> <p>Addition of 12 new units to RTE20103 Certificate II in Agriculture</p> <p>Addition of 17 new units to RTE30103 Certificate III in Agriculture</p> <p>Addition of 19 new units to RTE40103 Certificate IV in Agriculture</p> <p>Addition of 8 new units to RTE50103 Diploma of Agriculture</p> <p>Addition of 3 new units to RTE60103 Advanced Diploma of Agriculture</p> <p>Updating of 13 existing units of competency in qualifications and suggested pathways for specialisations</p> <p>Deletion of 3 existing units from qualifications and suggested pathways for specialisations</p> <p>Importation of 58 units of competency from other Training Packages to the suggested pathways and new qualification noted above.</p> |

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