



Primary Skills Victoria

Industry Skill Needs Report

February 2011

Produced by Primary Skills Victoria for
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Department of Innovation, Industry and Regional Development
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INTRODUCTION

The Primary Skills Victoria 2011 Industry Skill Needs Report forms part of a process of ongoing advice to the Victorian Skills Commission from information distilled by PSV Council members and organisations which they represent and staff on the workforce development and training of the industry sectors under PSV's coverage which includes:

- Agriculture
- Production Horticulture
- Amenity Horticulture
- Animal Care and Management
- Concervation & Land Management
- Sea Food & Aquaculture

In addition to maintaining relationships with key industry, government agencies and RTO representatives Council engages regularly with the national skills council Agrifoods Skills Australia and monitors closely developments during the year in the press and other media, trade magazines, journals and industry newsletters.

Data and intelligence collected is verified wherever possible with industry representatives on the Council and its relevant Standing Committees. The timeline for the process is setout in an attached appendix as are lists of personnel and organisations consulted during this period.

EXECUTIVE SUMMARY

NAME OF ITAB: Primary Skills Victoria

PERSON AUTHORISING REPORT: Greg Hallihan, Executive Officer

Analysis of the various sectors within PSV's area of responsibility reveals that some sectors are more exposed directly to current world than others.

While some agricultural and production horticultural sub-sectors service the local economy, others rely heavily on export markets and are thus are directly subject to the vagaries of world markets on a day to day basis affecting long term decision making particularly in such things as workforce development. On the other hand sectors such as Animal Care and Management and even CLM have little or no direct exposure to the day to day gyrations of overseas markets and respond to issues generated closer to home.

Adding a layer of complexity to the picture for many sectors is the increasingly problematic phenomenon of climate change and government polices both national and state. In the case of the Federal Government potential changes to water policy and lack of progress on emissions reductions options is causing concern. In the case of the state, one such issue is wildfire response which is the responsibility of the state government and in the area of VET training policy while the Council is strongly supportive of initiatives such as Skills for Growth and the Skills Pledge changes in fees policies for potential students is of concern.

The attached document attempts to explore some of the issues confronting the major sectors as well as many which affect many of the sub-sectors and which tend to slip beneath the radar but which again affect directly workforce development and thus training demand within each.

In summary the key findings that translate across most sectors include the following:

- Recruitment and retention of labour across most industry sectors is proving problematic and in some instances impacting on productivity. The inflationary effect of skills shortages will have major economic repercussions for Australia.

- In some sectors RTOs are seen to lack the skills or desire to provide technical training demanded by industry and limiting access to training to meet the need of industry.
- The potential impact of the Skills for Growth strategy is seen by those sectors recruiting labour with higher non-vocational qualifications as being detrimental to their training policy.
- Climate Change is a consistent finding throughout all sectors with the exception of the animal technology fields. The consequences of environmental change in the availability of water, threat from fire, prevalence of pest, disease and weed infestations will impact directly on production and food security.
- Ensuring food production sectors in particular have adequate biosecurity skills and quality assurance procedures to monitor and manage food crops.
- Animal welfare is becoming increasingly prominent in many of the primary production sectors which is forcing change in many traditional farming practices.
- Diversification in response to economic pressure and technical advancement is prevalent across many sectors such as Retail Nursery, Agriculture and the Companion Animal industry.
- Across all sectors there is a sense that there is a problem with public perceptions and poor image which deters new entrants.

INDUSTRY SECTOR REPORTS

AGRICULTURE – KEY CHANGE DRIVERS AND DEVELOPMENTS

The relentless drive for higher productivity continues with the need for higher inputs (larger farms, greater investment in machinery to lower manpower requirements) is needing to be increasingly set against the growing demand for sustainability although there is little consensus on what constitutes sustainability. In addition those involved in animal production enterprises are being increasingly put under the spotlight with respect to animal welfare practices.

Other recently emerging issues include the call for food security would appear not to be an imminent issue for the average Australian. While production will exceed local demand for any time into the foreseen future, the expected rise of world population by 2050 to 9 billion is set to become a global issue. In China alone food consumption is rising at a rate of around 20% / year however crop production levels have remained flat for the past 15 years or so and increasingly it has to rely on importation of food.

Food security as a global problem with emerging economies such as China and India are unable to meet their growing domestic food production needs.

The response to this is suggested as being the increased purchase on a national level of parcels of land by overseas companies and sovereign wealth funds to protect their population from future food shortage although the extent of these purchases is hard to quantify given the artificially high values set by the FIRB which trip the demand for notification of these purchases. A more likely response is that the purchases are more opportunistic and a desire to "park" money to reduce the current risk to capital being experienced on global financial markets. If these farms are maintained or upgraded this will not be an issue particularly as these properties will require skilled labour to operate, but problems will occur if active land management is not maintained.

In Victoria generally the size of land holdings are much more modest than the large tracts of land exchanging hands interstate but more evident has been the increased visibility of New Zealanders in the dairy industry in the higher rainfall regions of Gippsland and the South West leading to a rise in land values. With the recent GFC, real estate agents in the Gippsland area indicate that this activity has slowed over recent months.

Acquisition of Australian companies by overseas interests is placing increased pressure on smaller growers and placing uncertainty on food security.

A more pressing problem for local farmers is the increasing dominance by overseas companies on the register of and often outright purchase of local post production food processors and marketers and the increasing consolidation of smaller local companies which are increasingly dictating prices and growing contracts Commentators such a Julian Cribb are warning that Australia is at immanent risk of losing control of its own food resources. This issue has been highlighted in recent days by the acquisition of ABB by Viterra and a bid by Agrium for AWB. If Agrium's bid is successful, since the deregulation of the grain market two years ago, foreign entities will have gained control of around 60% of the Australian wheat export market

With Australia becoming a member of the World Trade Organisation (WTO) some years ago and the more recent entrance of countries such as China, biosecurity is increasingly becoming an issue with pressure being applied to government to permit the importation of overseas product particularly fresh produce into the country.

At a domestic level primary producers are experiencing the strains of population growth and consumer demand. Food consumption is increasing at a rate faster than our population and consumption is outstripping production, imports are growing faster than food exports. If this trend is to continue concerns have been expressed that Australia's domestic food industry is at risk. Compounding this is the dominance of two major retailers who have tight control over production and under their increased private label range is stimulating imports of products from low-cost countries.[1]

Foreign produce gaining entry into Australia is raising biosecurity concerns.

Numerous examples of diseases that could cripple the livestock industry are known as is the current fight by apple growers to resist the importation of apples due to fire blight. There are many others such as Varroa Mite (*Varroa destructor*) which could wipe out the bee industry and cripple production which is dependent on cross pollination within a crop.

Apples imported into America from China in the last two years have seen the spread of a particularly aggressive species of fly *Drosophila suzukii* in that country. Biosecurity Australia has provisionally approved the importation of apples from China subject to certain conditions but this pest would cause damage to the local apple crop.

The presumed recent introduction and outbreak in NSW of myrtle rust (or guava rust) which affects a wide range of species of Myrtaceae has the potential to defoliate and destroy large areas of eucalypts is another.

Uncertainty linked to the anticipated carbon trading scheme is bringing into question the economic viability of farming into the future.

Opposition to a carbon trading scheme on the part of one political party and the failure of the other to convince minor parties in the upper house of federal parliament to pass proposed legislation has left farmers in a difficult position. The industry itself is divided on the benefits with one section opposing the introduction of any scheme, the other seeing opportunities to exploit the scheme to their own advantage. The recent introduction of a price on carbon in New Zealand has led to the belief that prices for products derived from

[1] NARGA – The challenge to feed a growing nation, November 2010

the farm sector will rise and in an effort to curtail; these rising costs the prices for farm produce will come under further pressure.

The jury is still out on whether the recent state government initiative to encourage farmers to plant more trees or on the proposal by a political party at the federal level to set a price on carbon is economic. In addition, other proposals such as the sequestration of carbon potential in soils is poorly understood by the community generally although it has been heralded by one major party as a valuable carbon sink.

A consultation paper released by the federal Government on November 22 under the title of '*Carbon Farming Initiative'* is calling from stakeholders to provide submissions on the development of a carbon crediting scheme.[1] The 'Carbon Farming Initiative' as outlined in the consultation paper identifies a scheme that will have a carbon crediting mechanism, funding scheme to fast track projects and information and tools to assist landholders. The scheme identifies possible abatement activities including reduced fertiliser emissions, reforestation, sequestration in agricultural soils and reduced methane emissions from livestock. Submissions are due January 21, 2011 with an outcome that will very likely have a direct impact on the development of training to accommodate the strategies proposed.

Despite the recent rains and the prospect of higher allocations in the coming year, water continues to be a major issue for those horticultural enterprises who are still operating despite low water allocations during the recent drought years. Victorian irrigators along the Murray are anxiously awaiting the release of the Murray Darling Basin Authority's Plan which has been completed but not released for comment despite an implementation date of 2011.

The full impact of the Murray Darling Basin Authority's water strategy is uncertain and implications on farming viability being openly debated.

Conservation groups are pressing for sustainable diversion limits (SDLs) to be set in such a way that ensures a substantial percentage of the flows in the basin are reserved for environmental flows. With monies reserved for "buy backs", if thought is not given to the way this is done cherry picking of water in buy backs will result in channels and spurs being uneconomic to supply or maintain. This has already occurred in a number of cases where speculators have purchased properties with water rights, sold off the water and resold the land for dry land farming.

Australia is not the only country however with impending problems with water availability. Increasing diversion of water for industry and urban growth is set to be of concern to countries such as China.

[1] http://www.climatechange.gov.au/en/government/submissions/~/media/submissions/cfi/cfi-consultation-paper-pdf.ashx [accessed November 23, 2010]

Consumers domestically and overseas are demanding greater control on quality and traceability to point of origin.

Increasingly in response to pressure from consumers fresh food retailers particularly the large chain stores are issuing increasingly tight specifications for product and expecting traceability on the part of local producers local of product back to point of origin as well as proof of adherence to industry quality assurance schemes. This process is laudable but has increased costs to growers and is at odds with chain stores reluctance to identify even country of origin on product imported into Australia and to enforce the same standards of welfare on overseas suppliers.

Currently these demands have not extended to bar coding of individual items or packaging. In Japan traceability has reached the point where MLA has introduced QR 2D bar coding of meat product in stores so that customers using mobile phone technology can scan codes and trace product back to point of origin. This may yet apply to product within Australia and while large producers may cope it would disadvantage smaller producers even further.

Export markets are being impacted by fiscal policy and parity issues with the greenback.

The rising level of the $AU against most overseas currencies is reducing returns to the sectors relying heavily on export of their product especially dairy, grains and meat products. The NFF calculates that for every 1% rise in the /Australian dollar $210 million is lost to the bottom line of Australian farmer incomes. Coupled with this is the softening of demand from countries which have experienced greater debt problems following the recent GFC. Fortunately the effect of this GFC was much less pronounced for most East Asian countries and exports to these countries continue to be buoyant.

Fertiliser prices which rose steeply over the last 2-3 years have begun to drop with for example urea prices dropping to their lowest price for around 5 years. Grain growers and dairy farmers were particularly hard hit by these rises and many cut back on fertilizer inputs. Fortunately these rises coincided with seasons of low rainfall which reduced leaching losses. Tightening supplies may again see rises in these inputs in the near future.

Lobbyists are placing increasing pressure on producers and the welfare of livestock.

In relation to changing community expectations to the welfare of animals, the recent enactment by the Victorian Government of the Livestock Management Act in early 2010 will have far reaching implications for all livestock operations across Victoria and will come into effect once standards are developed and agreed to nationally. These national standards are expected to be introduced over the next 3 to 5 years.

Increasingly vocal demands from animal activists for producers in a range of animal enterprises to cease the practice of mulseing are well known. What is not so well known is the donation of $5 million to an animal rights group by the previous proprietor of Kathmandu (Jane Cameron) to pursue a whole range of animal rights issues through the courts if required. Intensive production sectors such as the pig and poultry are firmly in their sights but other producers can expect greater scrutiny in the near future.

A number of changes in both federal and state government policies in relation to education are already or will soon impact on the agriculture sector.

Concerns within the rural industry have been raised with the intention of equating a VCE qualification with that of a vocational Level II.

The intention to equate the completion of VCE with an AQF 2 qualification thus refusing to allow any student with a VCE to access funding for undertaking a Certificate II qualification may well be an issue for rural people. The ramifications of this will become more apparent when the revised qualifications are finally released. If there are any competencies shifted from Level III to Level II or there are Certificate II level competencies that underpin Certificate III competencies that cannot be completed within the revised qualification then this will present problems for the industry.

Changes to the national qualifications framework in agriculture/rural production have now been in the pipeline for around 4 years. The final versions have been released to industry. Skills Victoria has made the decision to allow “existing workers” (those employed longer than 4 months) to access training at recurrent fee rates from the beginning of 2011.

Declining enrolments are being reported by public RTOs in response to fee recovery reforms impacting directly on those who already hold a higher qualification.

The intention to progressively introduce charging of full fee recovery to students wishing to undertake a Certificate III or IV if they already hold a higher qualification may also present a disincentive to engage in education. This policy has already been introduced at Diploma level and has already had an effect on enrolments in courses where traditionally they have attracted students wishing to train for second careers. Fees in this situation can be as high as $8000. One large institute providing Diploma training in the rural studies area has reported greater than a 25% drop in enrolments.

Even RTOs which attract enrollees who predominantly enroll directly from VCE into Diploma programs are not immune to this problem. Enrolment fees have risen from around $900 to $2000 over the last 12 months.

There is to be a major change in the way in which student results are recorded and kept as well as the way in which RTOs will be funded in future. These changes will be implemented at the start of 2011. Records will be kept centrally and all RTOs will need to enroll students, conduct training, record results and furnish the results of student progress on a centrally held computer.

The aim of this change is to allow any student to access and retrieve a complete record of their academic achievement. The data collection is complex and will require a significant increase in administrative staff. Any minor mistake in entering the data will result in a rejection of the data and a need a complete check of the data entered to correct the error. These records in turn will form the basis for payment to the RTO for the delivery of the training. A separate set of entries will then need to be made to claim payment.

Since there will be in some cases a substantial time lag from the time of enrolment to the time of claim this will put significant pressure on an RTO's reserves. This change is intended to reduce "rorts" in the system and while discussion with the bureaucracy has not revealed any other motive it would seem the intent may also be to put pressure on the RTO to increase completion rates. It could however backfire and cause RTO staff in turn under pressure to reduce quality of delivery since the present VRQA audit system is a paper audit not an examination of direct student achievement.

In relation to the training available to the industry, members should be aware that in many cases the current level of commitment to delivering agricultural programs being displayed by many RTO's especially to higher level training is minimal and acquisition of knowledge more often occurs via external industry consultants, through informal channels such as industry driven field days or interaction with industry players etc. outside the formal training system.

SHEEP/WOOL/ LAMB

Sheep numbers have declined to around 70 million and while wool prices remain at indifferent levels the successful promotion of lamb by MLA etc, sheep / prime lamb prices are at historic highs. Live sheep exports from Victoria have dropped significantly with 2010 May export data showing exports are down to 20% of the 2007 levels. Further high prices for lamb are set to continue for some time following recent loss of half a million sheep in New Zealand in a blizzard.

High lamb prices and the successful completion of the GWM Water pipeline installed to replace the previous inefficient open channel system to supply farms in the region with water for domestic and stock purposes across the Wimmera and Mallee is causing grain growers who have turned their operations over exclusively to cropping in recent years to begin to rethink their strategy. In some cases this will require the restoration of fencing (to control sheep movement) on areas where fencing was removed to make more efficient use of cropped areas with the introduction of satellite controlled navigation systems (GPS / GIS).

The increasing levels of mice in cropping areas may hasten this return to mixed cropping/ sheep operation in an effort to reduce grain residues after harvest but also in recognition of the higher returns from prime lamb production.

In an industry where skills shortages have been identified, the recent suite of training reforms may have a direct and negative impact on future growth of the sector.

The recent decision by Skills Victoria to equate VCE with a Certificate II level qualification will have the unfortunate consequences for those participants wishing to undertake a Certificate II if they are over 20 years of age in that they will not be eligible for state government funding and will have to pay full fee recovery. In the case of shearing where an entrant into the industry has to complete novice and maybe also improver training before moving into Certificate III. (see Certificate III entry requirements section) This will have drastic consequences for recruitment into the industry

Much has already been written in the last couple of years concerning increased sensitivity surrounding animal welfare issues and practices in the sheep industry. Sufficient to say these concerns are not set to go away but the industry has responded to practices such as mulesing and the practice is being modified or gradually phased out through breeding.

GRAIN GROWING / CROPPING

After a number of years of low rainfall and drought conditions with the recent return to more normal, season's crop yields this year are expected to be much higher. While the recent good rainfalls have lifted the spirits of many farming the land there has been some indications that quality may be impacted due to the amount of rain that has fallen in some regions. With current expectations that the drought conditions in Western Australia will see a more than 50% reduction in harvest volume, Victoria by contrast is anticipating huge crops threatened only by locusts or late frost. However growers across the Mallee and Wimmera will also have to contend with mice.

The locust problem is well publicised but an increasingly more common problem will be that of mice plagues in cropping areas. Assuming these are controlled and there is some doubt that this will be achieved, returns to growers could rise this year with the forward contract price for wheat rising 80% since May due to the recent record summer temperatures across the wheat growing areas of Russia and countries like the Ukraine and Kazakhstan leading to a collapse of the harvest in those countries.

Other commentators however have indicated that world stocks are high and that the price bubble is driven by speculators (hedge funds etc.) rather than any real wheat supply shortage. This being the case, the price could just as quickly retreat with longer term returns and future viability being influenced by the $AU/ $US rate. The increasing dominance by large international trading conglomerates which control and exploit the international commodities traders such as Cargills, Louis Drefus are made more vulnerable by the high proportion of the crop which is exported.

In reality Victoria's production levels are not great compared to that of the other states although with the rainfall deficit being experienced in WA, Victoria's proportion of the expected 2010 national crop will be higher (3.5 million tonnes of a total of 22+ million tonnes). On the east coast wheat prices have remained steady at about $315-$320 a tonne though further tightening of the market could see prices reach those of 2007-08.

It is interesting to note however that with changes in rainfall patterns in recent years and by using innovative practices such as raised beds, crops are being grown across a wider area of the state. ABARE is yet to catch up with this change failing to record any production in the South West areas of the state. It is of note that after years of drought this year is the first where crops in that area have sustained damage where raised beds have not been installed.

The collapse of the single desk and the granting of export licenses to around 20 companies are rapidly changing the face of the way the post harvest crop is handled and marketed. Many growers are now storing grain on farm to try to maximise returns. This increases costs and the risk of spoilage through pest infestation in storage and ongoing education programs are required to increase grower skills in grain storage and are being encouraged by a number of these traders.

Increasing demands on growers to make complex decisions involving larger outlays and proportionately higher risks within the area of crop variety selection, fertiliser application, machinery purchase pest and disease control, marketing etc. is leading to greater reliance on external agronomic advice and the need for more highly skilled consultants to provide that advice. Growers are also conscious that the advice being provided has to be evaluated which means that they also require an understanding of the fundamentals influencing domestic and global change.

The adoption of technology is openly embraced by the industry however RTOs are either unable or limited in delivering the training demanded by industry.

The use of more accurate and sophisticated guidance systems over recent years has been a boon to growers although the cost of the technology has increased. It is unfortunate that despite requests for the training system to provide competencies to assist with the introduction of this technology this has not occurred and growers have had to rely on commercial interests to provide this training sometimes on a trial and error basis thus increasing the cost to growers. Development of further competencies in these areas using the skills of independent experts is also vital. Growers are also commenting that training in GPS utilisation is but one part of the skills need. The suggestion is that the full extent of these systems is not being fully realised and training in both application, interpretation of data and servicing these devices is in much demand.

The sophistication and size of grain properties is placing an increased reliance upon computer skills and applications that assist in the recording and functioning of these complex operations. As the broadband technology slowly reaches the rural communities the capacity to access, share and interrogate information via computer will increase. For many growers there is a sense that skill levels in software applications are not being fully realised and the capacity of the software is underutilised due to limits lack of training.

Lack of understanding of domestic and global economics as well as farm management business principles will increase the risk as farms increase in size.

The focus on the economics of domestic and global markets is unquestionably a significant part of the business decisions being made however the need to be able to manage these operations and evaluate the business decisions being made is considered to be critical. As mentioned, the increase in farm size is likely to lead to a greater reliance upon contracted specialist and engagement of farm workers. Effectively managing the human resource and retaining skilled workers will depend upon the human resource management skills of growers.

The shortage of skilled and specialist contractors is placing significant stress on the industry.

Larger operations in are becoming a reality due to increase in the size and technical advancements being made in mechanised equipment such as headers. The consequence of long term drought however has meant that investment in equipment has seen the reliance upon specialist contractors. Although contracting alleviates the capital investment requirements the flow on effect is that the availability, skills and timeliness of contractor availability is crucial. Compounding this is the apparent shortage of skilled contractors and the provision of specialist quality training through the RTO network. There is also emphasis on not just the technical skills of the contractor but the risks they present if they are not fully conversant with harvest contamination and mandatory record keeping associated with chemical application.

Specialist training is increasingly being responded to by industry networks such as GITN as opposed to RTOs.

In terms of specialised training to service the industry expertise rarely is available within the training network and over the last few years the industry is increasingly reliant on groups such as the Grains Industry Training Network (GITN) to facilitate this activity with funding from organisations such as the Grains Research and Development Corporation (GRDC). Programs recently conducted include specialist workshops on grain quality, spray technology, grain storage and the like. The training is comprehensive and often covers content from competencies within the national training package. It is on this basis that requests have been made to recognise skills sets in addition to full qualifications. This is further highlighted by the diversification taking place throughout the sector partly in response to the extended drought period.

Growers in many cases are broadening their production and thereby spreading their risk by incorporating livestock, in particular prime sheep production. Successful completion of competencies delivered by experts in these skill sets would prove an incentive for participants wishing to proceed to full qualifications. Farms are rapidly becoming multi-million dollar enterprises with farmers becoming skilled business managers rather than just growers of crop. The decisions growers make ultimately impact on the economic viability and success of the business and skills are needed in ensuring investment returns and risk is effectively managed.

DAIRY

For many years the number of dairy farmers was on the decline but a recent, comprehensive report published by Dairy Australia leads to the belief that the numbers nationally have now stabilised at around 5300 farms with the majority of these being located in Victoria. Victorian production is focused in four areas of the state, Western district, Northern Victoria, Gippsland and with smaller production in the far North East. Of these the future of production in the North of the state is captive to decision makers in the Federal Government with respect to availability of water for irrigation. The immanent announcement on this is due soon with the release of the plan to quarantine increased volumes of water for conservation.

Compared to the prices being paid to dairy farmers five years ago the dairy industry is enjoying somewhat higher prices currently for processed milk products although price volatility remains high and spot prices are considerably lower than those received during 2007-08. Aside from supplying the local market with fresh milk and processed milk products the industry is reliant on a buoyant overseas market to remain viable.

The impact of retail domination by two major players is being felt by farmers and processors in terms of their own future viability. The recent National Association of Retail Grocers of Australia (NARGA) report provide figures that indicate that retailers take 80% of the available gross profit, processors 16% and the farmer a mere 4%. [1]

Milk industry leaders have very strongly advocated for low or zero tariffs internationally and for establishment of free trade agreements (FTA's) although the current bilateral agreement with the United States has proved to be less than satisfactory as far as Australian producer returns are concerned. It is interesting that recent commentary from the Reserve Bank has been critical of bilateral trade agreements and has indicated much stronger support for multilateral agreements which unfortunately are more difficult to broker.

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[1] [1] NARGA – The challenge to feed a growing nation, November 2010

The industry remains captive to many factors outside of its control including, the global financial outlook, $US/$AU and other exchange rates, grain, fertiliser and fodder prices, weather and in the case of producers in the North of the state water allocations and the price of irrigation water etc. The 'Dairy Australia Dairy 2010 Situation and Outlook' provides further commentary on the industry.

The industry has a big advantage over other commodity groups in that due to regular reports issued by the processors the industry has on ongoing and up to date snapshot of the direction in which the industry is heading. Further, the industry has a strong educational focus and very strong ties with its training partners. Using funds from levies it is prepared to support and underwrite training initiatives as well as to further support these initiatives with funds from the Gardiner Foundation.

PIGS

Husbandry practices are being modified in response to retail pressure and animal welfare concerns.

The pig industry continues to be under considerable pressure on a number of fronts. Aside from the level of frozen pork imports running at around 2800 tonnes / week producers are facing increasingly vocal attack on animal welfare issues such as sow management and housing with Coles announcing that from 2014 the chain will not source product from breeders that maintain current industry accepted practice of confinement of sows in stalls. Coles announcement in July this year that excluded sale of Australia grown pork produced on farms without sow stalls was criticised by farmers as hypocritical as imported product did not have to comply with this caveat.[1] Coles has since extended this restriction to all pork products, sourced either domestically or from overseas and in the eyes of the industry 'level the playing field'.

Demand from major retailers that produce is compliant with quality assurance standards is driving the need for training.

In an attempt to increase acceptance of product by the chains by demonstrating a high level of quality assurance, the industry is moving to bring its operations into line with the 2008 published 'Code of Accepted Farming Practice for the Welfare of Pigs' which amongst other standards recommends that "Pigs must be cared for persons who are skilled in pig husbandry...". The attached guideline suggests that the level of competency of supervisors be at Certificate III in Agriculture – Pig Production or equivalent.

A major problem with compliance with this code is the turnover of up to 60% of staff on an annual basis but members of the pig commodity group within the VFF are mounting a major initiative to

[1] *'Coles frees up pork'*, The Weekly Times, November 10, 2010

train staff in conjunction with the an RTO, the DPI 'Pig Health Research Unit' at Bendigo.

Pork Australia in negotiations with Agrifood Skills Australia have listed a minimum of 8 units of competency from the national training package initially as a skill set which would form the basis for participants moving on ultimately to complete a full Certificate III. This would have the added advantage of making employers/employees eligible for Federal Government subsidies.

POULTRY

Poultry as an industry includes a range of bird species such as the domestic fowl, turkeys, and geese as well as a whole range of less obvious species, squab, quail produced by niche operators. The majority of the activity in the sector centres on domestic fowl and here the two major activities involve either egg production or chicken meat production. Both have undergone considerable change over the last few years with increases in scale of operation so that the cost of facilities and thus entry into the industry are high and at the same time driven by community concerns relating to animal welfare thee has been a shift away from cages to barn and free range in the case of egg producers and to free range for chicken meat.

Hatcheries have a higher possibility of disease maintain a high level of quarantine and are often isolated from other facilities in the production system.

Production costs are to a large extent captive to the cost of prepared rations sourced from grain and availability of these inputs and thus numbers of both layers and chickens for meat have fluctuated over the last several years. Recent assessment of the industry by the National Australia Bank (NAB) is predicting that increased costs are likely to see the price of chicken rise by about 3.5% in the forecast period. Stimulating this increase has been the global increase in grain prices in the order of 16.6% over the last twelve months. [1]

Absence of RTO provided training is hindering industry's desire to develop a workforce with nationally recognised qualifications.

Very few egg producers are vertically integrated. Commercial farms today vary between 4000 to 600,000 birds in Victoria with the average being around 150,000- 200,000 birds. The VFF Egg group has around 95% of producers and bird numbers and strongly supports training for the industry. Unfortunately there are almost no RTO's with poultry in their scope and for this reason there are moves to have experienced industry personnel undertake relevant training and assessment qualifications with a view to

[1] http://sl.farmonline.com.au/news/state/livestock/news/chicken-prices-fly-the-coop/2009389.aspx?storypage=0 [accessed November 29, 2010]

undertaking this work within the industry. Industry personnel have indicated that around 50% of the workforce is casual thus with the remainder being on–going and experienced. Pressure for training to occur will increase in 2011 with the availability of funding for existing workers with both Level 2 and Level 3 qualifications seen as targets for the staff.

The majority (around 85 %) of the production is of shell eggs with the remainder processed as egg product to the processed food sector. With the community moving to prepared foods the proportion going to this sector may rise.

Consumption of chicken meat over the last 20 years has risen steadily at the expense of beef and lamb rising from around 24 kg/ person in 1990 to approximately 38 kg/person last year (60 %). At the same time beef consumption has fallen 11% and lamb 17.5%. This is no doubt due to the price of the various meat products but also to the efficiencies of conversion of the birds which have also improved over those 20 years from 2.04 kg of feed / kg live weight to 1.8 kg of feed/kg live weight. Given that in 2009 there were according to the industry 470 million birds this amounts to a considerable saving in feed.

A recent announcement by Coles that 'house brand caged eggs' would be phased out by 2013 could potentially see the phasing out of caged egg production providing new opportunities for free range producers.[1]

After NSW Victoria is a major producer of chicken meat (around 30% of the national production) with the majority of the industry concentrated on the Mornington Peninsula, around Packenham,and Geelong but also in nearer regional areas around Colac, Lethbridge in the West and North West as well as Bendigo and Nagambie in the North.

[1] The Weekly Times, December 1, 2010

PRODUCTION HORTICULTURE- KEY CHANGE DRIVERS AND DEVELOPMENTS

Production covers a very diverse crop range across vegetables to fruit, nuts and supplies both local and export markets. Though not highlighted in ABARE's September 2010 Commodities Report, the data suggests that horticultural production ranks about third or fourth to other agricultural commodities in terms of overall production value.

Cost of production and the ever present problem of the exchange rate continue to trouble the industry. For table grapes alone the exchange rate has seen exports plunge from $190 million to $85 million in one year. Though fluctuating quite widely over the years, increasing international competitiveness and prices received for exported produce have also declined.

While those involved in export have their issues, those whose production is aimed at local markets and processors also have problems – a constant squeeze on prices exemplified by the situation potato growers are finding themselves in. The major processor Mc Cain's on an almost annual basis is reducing contract prices for potatoes supplied for processing and at the same time are sourcing them in increasing quantities from both Canada and New Zealand. Given the time to develop expertise to grow alternative crops (generally around 3 years) and given the conservative nature of many growers these growers are facing an increasingly bleak future.

Price expectation also dominates purchasers thinking and despite obvious differences in quality this increases buyer resistance to Australian product both overseas and locally

It is hardly surprising therefore that there is an increasing threat from overseas of a greater range of imports of many fruit and vegetables and that this treat is much higher than for much of agriculture given the ability of producers to exploit increasingly sophisticated machinery and technologies. In fact, in 2009 Australia wide imports of fresh/processed vegetables were more than double exports to overseas countries ($550 million to $245 million). This has been possible due to a series of export incentive schemes by overseas governments who at the same time as assisting their domestic growers also erect a series of non-tariff barriers to reduce the flow of imported produce from Australia. That having been said, exporters have been able to overcome this problem in the case of China through the "grey trade" via Hong Kong.

As far as Victoria is concerned it is not only the distance to markets that is a problem, the problem is exacerbated by the lack of direct plane flights out of Tullamarine. There are presently still only two flights per week to Japan despite many years of petitioning airline companies to address the matter. Even then access is a problem, since high value commodities such as seafood take precedence over high value vegetables like asparagus. This combined with the International Air Transport Association (IATA) rules of recent years has already "killed" the export of volume product such as flowers.

Most horticultural production has only a short shelf life; fresh soft fruits only a few days. A development in cool storage technology has prolonged shelf life of more durable pome fruits such as apples although there is the inevitable loss of quality over time. Even nuts such as almonds have only shelf lives of about 6 months before becoming increasingly rancid while others such as chestnuts only at best about 3-4months.

The Office of Horticultural Market Access (OHMA) which vets applications for assistance for aspiring exporters has a number of criteria on which they base their decisions including, volume/production levels and premium varieties, disinfection treatment methods and affect on produce, quality, place in market and price competitiveness and tolerance to movement by sea.

A member of that committee is of the opinion that the long term future of exports will only be found in the use of containerised sea freight for export and many horticultural commodities are not suitable for transport by sea. Even products such as asparagus for which South Gippsland is famous because of exceptional quality - extra large/plump sticks versus thin pencil product from Peru and China is a difficult crop to freight by sea. Table grapes are one product that "fit the bill" these also have the additional virtue of being sweeter than their Chilean counterpart.

Biosecurity and the detection, monitoring and control of pests and disease is an increasing concern as international partners place political pressure on government to reduce trade barriers.

The potential for pest and diseases to wreak havoc in many crops especially fruit crops which have lengthy establishment periods (often years) and long tree life are a constant threat and thus biosecurity is constantly on the minds of growers. Due to historically high quarantine barriers Australia remains free of a number of exotic diseases but constant pressure from overseas countries such as the United States, New Zealand and Asian countries such as China is seeing growers fearful that Biosecurity Australia is lowering standards. A number of countries have responded to these strict quarantine barriers by demanding enhanced protocols and implementing non tariff barriers.

Importation of apples from New Zealand continues to be resisted but with Biosecurity Australia now of the view that with treatment of fruit fire blight this will not be an issue. The issue is now with the General Agreement on Tariffs and Trade (GATT), and industry is expecting the importation of apples into Australia in the next season or two. This will result in some adjustments in the industry. Some industry participants see this as the "thin edge of the wedge" however others are of the view that New Zealand has a limited range of produce which could potentially affect Australian growers with kiwi fruit already being imported in large volumes into the country.

Almost annually outbreaks of new and devastating diseases are appearing for example recently reported has been the appearance in the Ovens Valley of chestnut blight (*Cryphonectra parasitica*) which over the last 50 years has devastated chestnut species in North America and Europe (*C. sativa*) and for which currently there is no "cure". The only species resistant to the blight is the Chinese chestnut (*C. mollisimma*) which has been imported in recent years but which grows poorly in this state[1].

The threats to production are both direct and indirect. A crop rely heavily on bees for cross pollination and fortuitously at present Australia remains free of the major pest Varroa mite (*Varroa destructor*) which has decimated hives across the globe. While the pest has been established in New Zealand for ten years evidence of synthetic pyrethroid has recently been detected. Currently Australia remains the last major bee-keeping region yet to be impacted by this pest[2].

In relation to citrus the creation of "Area freedom" from fruit fly has been a fillip for the industry allowing oranges particularly to be exported to Japan

The prospects of growing export markets and supplying domestic demand is limited by the availability of skilled labour.

Most horticultural enterprises with the exception of a few where mechanical harvesting is possible require very high labour inputs especially during harvest but because of the seasonality of many operations growers have constant difficulty in obtaining labour and thus many rely on backpackers and unfortunately in some cases, illegal immigrant labour. The recent collapse of international education related to the skilled migration program is also likely to have an impact on semi-skilled labour throughout the sector. It is interesting to note that most countries with which Victorian growers compete on the export market have either a low paid workforce internally or rely on a migrant seasonal workforce to harvest their crops (e.g. Mexicans in California).

While this is so, the post harvest handling of product is increasingly more sophisticated due to the installation of computerised grading equipment a higher level of computer literacy in the understanding of the control equipment as well as in the dispatch and tracking of product to market is required. Associated with this increasingly is the need for traceability of product from consumer back to its original source of production. While it is still some way off in common with other product on supermarket shelves, bar-coding will increasingly be introduced. Indeed already in Japan as with beef, 2D bar coding in now used on displays of kiwi fruit.

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[1] http://new.dpi.vic.gov.au/agriculture/pests-diseases-and-weeds/diseases/chestnut-blight [accessed October 25, 2010]
[2] http://www.abc.net.au/science/articles/2010/03/24/2853860.htm [accessed October 25, 2010]

Management skills and production skills will be in demand as producers grow in size.

With this in mind, initial training of staff should be followed by training in supervisory and middle management skills to ensure the level of skill to oversee operations from orchard/paddock to packing house are efficient. Historically given that many of the enterprises are still family managed, efforts to encourage this training have been hampered by low levels of interest on one hand and the delivery of non - industry related generic training on the other.

Some concern has been expressed by those to the west of Melbourne in particular as to the availability of RTOs with Production Horticulture on their profile. With large providers such as The Gordon no longer offering courses in the Werribee area the opportunity to seek accredited training is significantly restricted. Admittedly private RTOs can and are in a position to fill the vacuum though the infrastructure associated with developing hands-on skills is limited. The tendency here is that qualifications as such very much become more a RPL process rather than development and enhancement of skills.

A number of initiatives such as the 'Sunbeam Future Farmers' in collaboration with Rural Skills Australia is in response to the flagging interest in young people willing to take up agriculture as a career. The program matches farmers with young people who may be considering a full, part-time or school-based Australian apprenticeship in the rural studies sector. Of the 45 participants nationwide participating in the program just under half are from Victoria and undertaking training at Certificate II and III in Production Horticulture. The program highlights the importance of industry sharing in training investment to achieve a positive return.[1]

Agro-tourism and its extension into the service sector is an opportunity for innovation and market development.

While some issues affecting this sector are common to agriculture many are unique to this sector. Niche market growers in the high land cost areas such as the Yarra Valley (berries), Ovens Valley (nuts) are beneath the radar in many cases. Areas in proximity to the city aside from the obvious vineyards with their associated cellar door facilities are an increasingly more common "pick your own" and farm gate enterprises. Areas such as the Dandenongs and Yarra Valley are destination points and can be more loosely included under the umbrella of agro-tourism. Many of these are small holdings on high value land with little opportunity to purchase larger areas. These being the case they have to be innovative to obtain market exposure often needing to value add and rely heavily on the internet to promote their wares. Much of this activity is "below the radar" and overlooked by government but nevertheless is significant on a local community scale.

[1] Pers comm.. Gordon Griffin, Rural Skills Australia, November 23, 2010

Producers of most emerging niche crops would be better concentrating on developing local markets than attempting to break into overseas markets. The scale of production required to supply local supermarket chains is such that for the more popular crops/products, growers need to be able to supply of upwards of three pan techs per week of product to interest these chains.

Niche producers provide diversification in the industry though struggle to find the technical skills and knowledge to develop their business.

Many of these people enter the industry in their mature years after successful careers in other fields and invest superannuation savings in their ventures. Like others in more mainstream horticultural crops they face the problem of attracting labour during the picking season. They are commonly incubators for newly emerging crops, one recent example of which is truffles. Unfortunately however when seeking technical assistance there is little assistance to be had from mainstream institutes whose staff do not have the expertise in and have to rely on industry associations for this assistance. They rarely need assistance with generic skills in business as they normally have these or have contacts to obtain them. They require assistance with cultural and technical skills and knowledge. Where there is expertise to be found within the established RTO network, because of their educational backgrounds, under new fee structures they are required to pay full fees for any tuition.

Limited access to quality irrigation water threatens the future of vegetable production in some regions.

Unsurprisingly, climate change and the impact that this phenomenon is having upon reliable water supplies for vegetable growers is impacting on production in some regions. Vegetable producers in Werribee to the west of Melbourne have been dependent upon recycled irrigation water from the nearby treatment plant. Soil salinity levels have been progressively rising over the years with some growers anticipating reduced yields as the situation worsens. Plan for a desalination plant to reduce salt concentrations have recently been shelved due to questions into the viability of the proposition. Treated water from the proposed plant was estimated to cost growers in excess of $2000 per megalitre which is 10 times current water charges[1]. Growers in Keilor and Bacchus Marsh are also experiencing difficulties as access to reliable water supplies place the future viability of growers in serious doubt.

The release of the MDBA briefing document has generated uncertainty.

In other production regions, uncertainties surrounding water shortages, climate and the relentless drive to return water to the environment. Irrigators to the north of the state have been vocal in their repose to the release of the MDBA Briefing document and the threat they believe this will have on the viability of farms into the future.

As a consequence of this reliance upon recycled water, the risk of contamination through unacceptably high levels of ecoli is impacting

[1] *'Werribee desal blow'* Weekly Times November 3 2010

on some growers where monitoring of water quality through irrigation systems is inadequate. Food safety is of increasing concern to many in urban areas giving rise to interest in organic food production. It is difficult to obtain actual figures on the extent of this activity in the production horticulture sector since there is a tendency to quote figures that include the extensive "rangeland" activity particularly given over to beef production in states such as Queensland. Allied with this production but not necessarily tied to them are farmers markets that are increasingly evident in urban and country towns surrounding the metropolitan area. Discussion of the future expansion of these frequently relies on reference to these in the United States but it needs to be pointed out that in the Victorian context the population is highly centralised around the capital whereas despite a number of very large cities in the United States the population is more decentralised and there are large numbers of medium sized towns (over 600) with surrounding farm lands which support these markets.

Quality assurance and compliance with health standards underpins consumer demand for fresh, clean produce.

The risk faced by growers is the refusal of larger retail suppliers such as Coles rejecting produce on the basis of failed quality standards. While retailers such as Coles have their own quality assurance standards, growers are also required to adhere to HACCP (Hazard Analysis and Critical Control Point). Growers have also expressed that compliance regimes and purchasing pressures from these large retailers seems to have little regard for seasonal variation that may affect quality of produce. There is a sense of frustration that quality assurance standards seem to be a means of regulating retail supply and demand issues rather than produce quality. The National Association of Retail Grocers of Australia (NARGA) has highlighted the concern that approximately 80% of packaged grocery sales are dominated by two major supermarket chains.[1] It further highlights how producers are being forced to merge in an attempt to be able to negotiate a fair price with these retail giants.

The impact of economies of scale in this sector as growers meet contractual obligations of larger corporate retailers and the requirement to supply volume at ever tightening quality control standards may well determine the future of some growers. Having skilled staff appropriately trained to meet supply, quality assure and maximise returns to the grower will be in demand.

[1] NARGA – The challenge to feed a growing nation, November 2010

AMENITY HORTICULTURE - KEY CHANGE DRIVERS AND DEVELOPMENTS

While the sector is not immune to events in the world economy, because of the measures implemented by the Federal Government early on in the GFC the sector has not been affected to the extent predicted in early 2009. Housing activity remained buoyant in part due to the federal government's generous First Home Buyers Scheme and although the grants have been scaled back and housing starts have declined marginally, sectors such as the landscape industry continue to report moderately strong activity.

Impinging more directly on the sector for a number of years has been the lack of rainfall which affected all sectors through the widespread application of water restrictions. Easing of these restrictions in early 2010, widespread rainfall throughout most of Victoria and for metropolitan Melbourne particularly, completion of the North South Pipeline and the immanent completion of the desalination plant is seeing these restrictions eased further, albeit that the price of reticulated water in metropolitan Melbourne is set to rise substantially.

Industry representatives across the parks and turf sectors in both metropolitan and regional areas report that as a result of the prolonged drought many have put in alternative strategies to harvest water on site, sink bores, access recycled water therefore reducing dependence on potable mains water from water authorities. Use of recycled water has not been without its problems though depending on the source of supply Soluble salt levels vary considerably leading to significant rises in exchangeable sodium levels in some soils on ovals dependant on this recycled water over the last few years.

With the state election in November it was no surprise that water restrictions were recently eased for watering of sports grounds and on 23rd August for domestic gardens, with the exception of lawns. Given the recent drought conditions and the continued embargo on watering of lawns, companies specialising in the supply and installation of synthetic turf have reported a significant increase in its use even in domestic situations especially for small areas in higher density housing developments.

The difficulty in attracting potential employees has been sighted as common to all horticultural sectors with the exception of the landscape sector and in common with other industries in Victoria has found holding them, particularly apprentices until the completion of their trade also a problem. One would have expected with the recent economic downturn that this problem would diminish but this has not been the case.

A matter of demand on the various sectors of horticulture that service the community in relation to the government proposal to extend the urban growth boundaries is referred to in the section below covering parks, however the effect of the growth of the metropolitan area will also increase demand for other horticultural service industries from mowing and domestic gardening services to landscaping, arboriculture and plant nurseries. Allowance must be made in planning by Skills Victoria for extending training opportunities within these areas.

In addition the decision to introduce a $95,000/ ha development tax on land sold within the recently extended growth boundaries is having unintended consequences. Developers are moving to towns outside these boundaries such as Bacchus Marsh, Drouin, Warragul and Wallan with shire councils over recent months approving subdivisions of in some cases already in excess of a thousand lots. Interestingly in addition to the housing and land packages being cheaper (up to $30,000 less) the State Government is providing an additional grant in excess of the current $20,000 to first home buyers in these developments which will only exacerbate the situation with the packages being promoted on the promise of fast reliable public travel (rail) to the city centre.

NURSERY

Consumer demand for growing their own fresh produce is driving sales and marketing strategies.

In relation to changing customer purchase patterns, sales of potted colour (ornamental annuals etc) and vegetables (e.g. Kale, tomatoes, silver beet) in larger containers are becoming more popular. Single plants in 200mm are becoming attractive to consumers for an instant effect rather than growing and waiting 8 to 10 weeks for maturity. Mixed multiple seedlings in punnets in an advanced form is also popular. The suggested reasons being that this trend is cyclic but is driven by:

- the urge to have fresh food;
- a feeling of health and well being;
- the mushrooming of higher density housing particularly in the inner suburbs limiting outdoor space on inner urban;
- lack of time.

Associated with this have been recent discussions with seed growers and retailers aimed at identifying and naming high value vegetable products within stores which would drive additional sales. This concept is already beginning to emerge with the naming of apple varieties etc. and more recently potatoes on display stands within stores.

The growth of the large retailers and focus on 'customer experience' is not necessarily translating into skilled staff.

The effect of the trend of increasing concentration of retail power by large retailers such as Metcash (Mitre 10), Wesfarmers Coles (Bunnings) and Woolworths (in association with US company Lowes) through their "big barn "stores was queried by PSV. Industry insiders believed that good industry operators would "continue to kick goals" against stores such as Bunnings through provision of an expanded range of services (free workshops, advice provision etc), diversification into other goods such as up market outdoor furniture etc and being viewed as destination points with cafes etc. associated with them. An example sighted was of one centre which had even opened up a health and well being centre and gym attached to attract customers.

Discussions with a number of RTOs reveals that big barn stores are recruiting staff for their plant life operations with little knowledge of plants and are requesting training in the form of short courses to overcome this problem. While this is laudable, over the long term this strategy has the capacity to reduce the level of plantsmanship skills in the industry overall.

The prevalence of exotic disease and change in plant material is one of a number of industry responses to the climate change phenomenon.

The entry of exotic diseases is of increasing concern to the industry as illustrated by the emergence of downy mildew on impatiens crops in the last 5 years. Growers have reported heavy losses in production houses leading to reticence on their part to grow the crop. Of even more concern is the emergence of myrtle rust (or more probably guava rust) in NSW. This disease is reported as having a number of hosts from within the Myrtaceae family and could have a widespread affect on nurseries, parks and turf recreational plantings as well as home gardens.

Increasingly warmer temperatures and reduction in incidence of frost particularly in metropolitan Melbourne will see increasing use of more semitropical species such as hibiscus. Unfortunately here again with hibiscus problems are appearing. A recently introduced pest Erimose mite now prevalent in Southern Queensland will cause considerable damage as it migrates south.

Water availability and increase in cost is impacting on consumer demand for green life material.

Production nurseries have for many years have faced the issue of water cost and availability and in many cases have installed very sophisticated irrigation and in line liquid feed systems. For this reason government regulation requires drainage on site of nutrient laden run off to be harvested, and in turn nurseries monitor salt levels, treat and reuse this water in tandem with other water sources. Difficulty of accessing water in the north of the state is such an issue that there are no production nurseries of any note in regional centres such as Bendigo. Paucity of supply has led to many production nurseries in the north of the state being established along the Murray around towns such as

Swan Hill, although this region has not been without its problems with supply in recent times.

In the area of innovation in production, the introduction of "mega bales" of peat and associated processing machinery from overseas driven by the high $AU seems inevitable. These can be purchased, transshipped, landed and used by local growers at a competitive price.

In relation to water availability for domestic garden use across the state, heavy restrictions on its availability have had a severe impact on the industry over the last 5 years. With the commissioning of the northern pipeline and completion of the desalination plant, the problem of water restrictions for householders in the metropolitan area will recede although the issue of price will be of concern to those on restricted budgets.

Recruitment and retention of young people into the industry continues to be a serious problem.

With respect to the employment issue, nursery employers report having attempted a wide range of campaigns including direct advertising within schools. Employers who have indicated a desire to recruit school leavers with potential as future line managers within the organization have been particularly disappointed at the low levels of literacy and numeracy exhibited by those who have applied.

The state's major nursery organisation the NGIV is attempting to address the issue of attracting employees by sponsoring/hosting/ facilitating a traineeship program with funding from Skills Victoria. RTOs have been invited to tender to conduct the program with prospective participants currently being recruited. Participants on successful completion of the program will be offered positions in nurseries hopefully in their own area.

After four years in its gestation and a number of requests to take into consideration the views of the industry in the revision of the national qualification, the final draft has been released for discussion/approval.

LANDSCAPE

Provision of training to members has been a high priority for the Association to ensure that members stay up-to-date with skills and also create a culture of continual lifetime learning for the industry. As well as a range of training sessions run by the Association covering business and industry related topics, thirty five members have signed up for the Skills For Growth Program and eighty-nine have signed on to the Skills Pledge. The 'Skills for Growth' Program has been well received by those who have had a consultancy that has assisted them in identifying skills their business needs for growth and developing a training program for staff.

This sector is one of only few sectors that are experiencing growth as consumers retrofit their gardens for a climate with reduced rainfall.

Water restrictions and the global financial crisis appeared to have a positive effect on this industry with the public seeking out professionals and investing in their homes. Many members have recorded their best year to date. There have been some signs of a slow down this winter with the higher end of the residential market delaying larger projects or choosing to stage them, whereas demand for smaller projects remains strong. Indications are that the market is again starting to pick up for the normally busy spring / summer period. Demand for pool construction remains strong and the commercial sector is picking up after a very competitive year in 2009.

The industry now awaits the adoption of the changes to the Certificate III in landscape construction and has been involved in discussions with landscape design training packages working through issues concerning underpinning knowledge particularly in relation to construction knowledge and understanding. Some more work is required in this area.

The Association itself has recently re branded with the intention to better define itself with both the public and the broader horticulture industry. The industry has evolved significantly in recent years with greater emphasis on construction as opposed to green life and this has created a need for further skill specialisation within the industry and further training in OH&S procedures and subsequent licensing. The Association has been working hard to bring all construction members up to building registration standard. Development of industry standards and benchmarks will be a future priority.

Much has been written concerning the recent global financial crisis and its effect on the world economy but on the local level and in sectors such as the landscape industry water restrictions and the global financial crisis appeared to have a positive effect on this industry with the public seeking out professionals and investing in their homes. Many members of the association which represents the industry, Landscaping Victoria have recorded their best year to date.

Those involved in completion of landscaping associated with new home construction continued to experience regular work up until the cessation of the grants under the First Home Buyers Scheme and while there have been some signs of a slow down this last winter with the higher end of the residential market delaying larger projects or choosing to stage them, demand for smaller projects remains strong. Indications are that the market is again starting to pick up for the normally busy spring / summer period. Demand for pool construction remains strong and the commercial sector is picking up after a very competitive year in 2009.

This continuing demand for landscape services was evident to those watching the job market and has been reflected in the national skills needs list maintaining landscape gardener as one of two occupations in the horticultural field where there is still a visible skills shortage

With a long standing commitment to training, recent changes in legislation and licensing requirements will need to be addressed.

The industry is multi faceted in that there are those members of the sector that are closely tied to building contractors both project builders and those in multi unit developments while others are more involved in garden renovation work associated with longer established homes typically in the middle suburbs closer to the city center. The industry itself has evolved significantly in recent years with greater emphasis on construction as opposed to green life and this has created a need for further skill specialisation and additional training in OH&S procedures and as well as further training to meet recently introduced building industry licensing requirements. With this as an imperative, Landscaping Victoria has been working hard to bring all construction members to meet these requirements. In addition, the association executive has set the development of its own industry standards and benchmarks as a future priority.

The association has a strong interest in promotion of education of its members as has been evidenced by its promotion of the state government skills pledge and the participation by some 30 members in the skills for growth program which has proved beneficial in that a number of employers indicated that being involved in developing a workforce development plan which formed part of the consultation process focused their attention on the skills requirements of their staff going forward.

Recruitment in this sector is strong, partly due to the positive media image that attracts young people to the industry.

Unlike other horticultural sectors, landscape employers seem able to continue to attract recruits interested in a career in the industry. This level of interest has been attributed to the ongoing screening of lifestyle programs on local TV but perhaps also more indirectly to the success over a number of years of Australian designers at the Chelsea Flower Show.

As with other sectors of the horticultural industry the association has been heavily involved in discussions relating to the review of the national training package and because of concerns with the difficulty of being able to have its concerns addressed now awaits the final drafts incorporating changes to the Certificate III in landscape construction. It has also been involved in discussions relating landscape design training packages working through issues concerning underpinning knowledge particularly in relation to construction knowledge and understanding. The association believes that some more work is required in this area.

The introduction of the state accredited Certificate IV in Design accredited around 5 years ago has proved a mixed blessing. While some providers required entrants to have completed a prior certificate which identified them as having construction skills others permitted direct entry to the program. While this opened up the course to a wider range of participants, many did not have the knowledge and skills which would have been in their armoury if they had completed foundation skills programs. The program is now up for reaccreditation and discussions are in train with providers on this issue.

TURF

The turf industry is a significant part of Victoria's horticultural industry employing over 11,000 people with an estimated economic value of $1.4 billion. The sportsturf industry has a highly visible profile and provides substantial benefit to the state's economy through events such as the Australian Rules Grand Final, Australian Masters, the Melbourne Cup, Boxing Day Test and Melbourne Grand Prix just to name a few.

The Victorian sportsturf Industry is diverse, represented by such occupations as sportsfield curators, racecourse managers, council workers, agronomic consultants, golf course superintendents, bowling greenkeepers, turf growers and grounds persons.

Industry is experiencing critical shortages in skilled staff and problems in the retention of trained personnel.

The industry has struggled to maintain and recruit people into this sector. Low paying wages and a younger generation more interested in technology have lead to a significant decline in personnel within the industry. Younger people leaving school are not finding positions within the turf industry attractive. This in turn has lead to a shortage of apprentices moving through the industry to fill the vacancies as qualified staff leave.

The industry is of the opinion that the general perception of the industry within the community has not improved. It is still regarded as a "dumb" job. This was exacerbated by advertisements screened during live golf broadcasts on Channel One throughout summer depicting a 'dumb' greenkeeper.[1] The turf industry needs assistance in promoting understanding amongst the community on the variety and technical skills needed to perform the tasks required in golf and sports turf management.

Turf associations such as the Australian Golf Course Superintendents Association (AGCSA) and the Turfgrass Association of Australia (TGAA) continue to promote and develop the industry. More work needs to be done at government and secondary school level to support the ongoing careers of those in the industry as well as promoting sportsturf management to school leavers.

[1] Pers comm.. Simone Staples Events and Education Manager AGCSA, November 25, 2010

Water harvesting, delivery and treatment systems will be reliant upon new technology, increased education, training and public awareness as the impact on Climate Change is felt.

Water and the awareness of water usage will continue to shape the future of the sports turf industry in Victoria. The ongoing need to adapt to the much discussed issue of climate change and in particular, the sources and uses of water required to irrigate must remain a focus for education, training and public awareness. The return to normal rainfall in 2010 should not be seen as a resolution to the challenges of improving water use efficiency. Ongoing education to change the community perceptions to the amount of water used on sportsturf surfaces continues to be an important turf management issue.

To maintain the viability of the sports turf industry, this sector has had to adapt to the pressures of climate change, with the main impact thus far being the availability of water. Significant investment has been made in two major areas; firstly, the ongoing conversion programs on many golf courses, sports grounds and race tracks from potentially unsustainable, cool season turf grass varieties to more sustainable, drought tolerant warm season turf grass varieties. Secondly, the installation of infrastructure that sources alternative sources of water. These include recycled and harvested waste water, treated effluent and desalinated water.

New and emerging technologies continue to transform the industry and maintain its future viability.

The future of the sports turf industry will be shaped by new and emerging information and communication technologies. These technologies continue to accelerate and permeate almost every job function within the workplace, from machinery and equipment to data collection and programming. The pace of change means that all areas of the turf industry must modify their practices. Industry is calling for increased investment to be made for training and practical support for reskilling if these technologies are to be embraced.

The industry is also committed to ongoing research and direct involvement in the breeding and selection of new grass varieties that will meet future needs. As new turf varieties are introduced into the market the biology and maintenance requirements need to be understood through ongoing training of existing staff. Further research has been undertaken within this sector through consultation with key stakeholders in the development of a national turf wicket standard that will provide prescriptive requirements on soil used in the construction of turf wickets.

The sports turf industry clearly understands that participation in a knowledge based economy demands a high quality vocational education and training system. The recruitment process of attracting career focused and highly motivated young people to enter into (and complete) an apprenticeship within the industry continues to be a challenge in meeting the demands of the industry. The four year apprenticeship is still industries preferred model. The industry is also committed to supporting a Professional Accreditation scheme that ensures the integrity and professional standing of those working in the industry.

Industries commitment to professional development could become cost prohibitive under the 'Securing Jobs for Your Future' initiative.

Existing staff also require ongoing professional development, and in many instances, retraining, so as to retain competency in this changing environment. The higher fees now being leveled at Certificate IV and Diploma will have an impact on the industry in later years as it becomes too cost prohibitive to achieve higher education.

Similarly the introduction of fee recovery will enormously impact those wishing to choose turf management as a second career or current industry employees who wish to increase their knowledge base i.e. management or technology training. This fee recovery also impacts on the issue of regulations and compliance.

ARBORICULTURE

The arboriculture industry continues to struggle to attract skilled labour and provision of training across the state appears to be diminishing. While the profession was once the domain of local government arboricultural services are very much thriving franchise and contracting services across the state.

Arboriculture is a young and dynamic industry offering a rewarding range of practical, professional and scientific training and work. Unfortunately the industry continues to struggle to attract skilled labour. In part this is a result of the diminishing quantity and quality of training, provided across the country.

Industry is experiencing critical shortages in skilled staff as the sector continues to grow.

Offshore labour has been used by many companies to try to fill the skills and labour gap. In the practical tree maintenance sector of the industry this has helped fill the void. In the professional consulting sector of the industry, offshore labour has not been as successful. Arborists from other countries have a very different skill set that is needed for our unique Australian tree species and their growing environment. It is vastly different and more complicated than those found in many other parts of world.

Arboricultural services were once principally the domain of local government. Now the industry is much more diverse with many private companies providing a comprehensive range of contract services to a variety of clients including State authorities, local government, private utilities and right down to the concerned private landowner who wants a professional service, rather than someone with a ute and a chainsaw moonlighting after hours.

Greater regulation of the industry is being called for via a licensing system.

Arboriculture is not a regulated industry, which is causing OH&S issues for people working in it. It also results in best management practices often not being achieved. Last year Queensland recognised Arboriculture as a separate trade from Horticulture. This is something that industry considers should also happen in Victoria.

Achieving uniformly safe working environments and achieving best management practices will require Arboriculture to become a licensed industry, similar to other skilled and potentially dangerous trades like electricians.

Tree preservation and assessment skills will be stimulated by development of the CPRS.

The imminent introduction of some form of Carbon Pollution Reduction Scheme (CPRS) by the Federal Government will change the focus on tree preservation and dramatically increase the value of trees. This will exacerbate the skill shortage of qualified (AQF 5) and experienced people in the industry to conduct tree assessments.

With the prolonged drought and resultant loss of established trees on both private and public land the industry has experienced a period of increased activity.

The industry views that the exaggerated concern about the risk of trees within the community, further enflamed by the reaction to the 2009 Black Saturday Bushfires, combined with prolonged drought has resulted in significant loss of established trees on both private and public land. The Arboriculture industry experienced a period of increased activity as a result; however, over the coming twelve months it is envisaged that this will decrease back to more traditional levels.

Arboriculture Australia with their many international alliances is a strong not for profit association that promotes, education, improved safety and practices to the industry. This includes annual conferences and seminars, along with tree climbing championships to showcase leading tree access techniques and improved safety technology, right around Australia.

The industry is taking a proactive approach to education and training and recognises the value professional status has for this sector's growth.

This association has recently introduced a professional category of membership to encourage continued education within the industry. Continued Education Units Program for its professional members are now tracked and available to demonstrate these members' commitment to best practice. To date, Arboriculture Australia has been solely funded by members and industry sponsorship and is the only large body currently committed to improving education and standards within the industry.

Skill shortages are still being experienced across the sector. This is acknowledged by the retention of arborists on the Occupations in Demand list under the heading of Tradespersons and Related Workers. It is worth noting that other than Landscape Gardener, Tree Surgeon (Arborist) is the only amenity horticulture occupation to remain on this list.

PARKS

While tendering out has remained significant over the last few years local government has increasingly revisited in-house staffing arrangements.

Discussion with senior parks personnel across both metropolitan and regional areas has revealed a number of changes and developments are in the pipeline which are worthy of note and which will also affect the demand for labor in the sector.

Growth in parts of regional Victoria and Melbourne's fringe may well see an increased demand in parks and gardens staff to service community expectations.

Government proposals to extend Urban Growth Boundaries have received significant publicity, however even without these extensions metropolitan councils such as Wyndham and Melton in the west particularly and regional councils such as The Greater City of Bendigo expect substantial growth over the next five to ten years. Australian Bureau of Statistics (ABS) data confirms that over the September, 2010 quarter over a quarter (27.3%) of dwelling unit approvals in Melbourne were located in the local government areas of Wyndham, Whittlesea and Melbourne CBD.[1]

Wyndham alone is planning for an increase of in population around 70,000 alone across the municipality with a conservative commitment to increasing sporting and recreational facilities substantially over the next ten years (26 ovals, 12 soccer fields etc). Similarly, Bendigo's Regional growth boundary extensions will result in growth in all directions with the exception of the South where the city is bordered by state forest This council has commenced a program of expansion of its recreational facilities and in the area to the North of the city alone is currently completing a complex of seven sporting fields at Epsom.

In relation to water, over the last five years many councils have made alternative arrangements to assist in maintaining a limited number of surfaces for play using recycled water from sewage treatment plants often at considerable expense to the administration. With the advent of higher rainfall over recent months, restrictions on its use on ovals and sports grounds have been lifted a move that will save one metropolitan council alone around $0.5 million /year.

[1] Australian Bureau of Statistics, State and Regional Indicators, Victoria, Sep 2010.

ANIMAL CARE & MANAGEMENT- KEY CHANGE DRIVERS AND DEVELOPMENTS

Affinity with animals draws people of all ages to careers in this field and this coupled with increased opportunity to access training has been enhanced significantly with the introduction in 2004 of the national training package. The package's menu of not only prevocational/ introductory programs such as Certificate II in Animal Studies but also other programs, provide qualifications to enhance entry into private employment as well as the public sector.

Within the sector are grouped a range of occupations that while having a common animal theme are nevertheless quite diverse in their nature ranging from research related animal technology through to animal shelters, local government animal control, veterinary nursing, captive animals, farriery and equine dentistry

While a recent meeting of PSV's Animal Care and Management Standing committee declined to recommend the Certificate III in Animal Studies for listing as a traineeship, all other Certificates III and IV attract commonwealth subsidies for employees undertaking these programs in a range of occupations. Support for industries for these traineeships is made more attractive particularly for Small to Medium Enterprises (SMEs) through the government initiative for uptake and completion of traineeships.

ANIMAL TECHNOLOGY

Victoria's position as the biotechnology hub and the biological research that this attracts will fuel the demand for animal technicians with appropriate technical skills and animal welfare credentials.

Over recent years the Victorian government has promoted Melbourne as a biotechnology hub and as a result is now recognised as one of two in Australia,-the other being situated in Queensland[1]. There are now around 180 publicly listed and private companies, around 35 independent research institutes and public teaching hospitals and universities dedicated to or maintaining research facilities directed at biotechnology research. Publicly listed companies alone are valued currently at $24 billion employing of the order of 22,000 employees.

With the recognition of the genetic similarities between humans and animals such as mice, research into human diseases has long used the small animal model to underpin this work and more recently increasingly other species such as fish (e.g. zebra fish) to assist in this research.

The relationship between the state government sponsored Monash Synchrotron and the use of laboratory animals in studies of human diseases has been highlighted in earlier Industry Skills Needs

[1] 'Victoria Leads the Way in Biotechnology', The Age, October 20, 2010

Reports. The latest announcement of the collaboration between Peter MacCallum Cancer Centre staff and British researchers of the unraveling of the molecular structure of the perforin protein and the part played in destroying rogue cells in the body is a further example of the use of mouse studies in this work.[1]

Historically, care and maintenance of animals within research institutes was seen to be the main activity of animal technicians however over more recent years the range of activities these personnel have been called to undertake in support of researchers has altered substantially. The change in title designation to technologist reflects this change. These additional duties include skills in artificial breeding techniques as well as those relating to embryo technology such as colony rederivation, cryopreservation and collection management and manipulation of embryos. Animal technologists are now taking a more active role in research hence the inclusion of elective subjects in the diploma such as Prepare cell and tissue cultures (MSL974011A) and Analyse and present research information (BSBRES401A).

Training for animal technologists has been available and funded for many years in Victoria as state accredited courses. Prior to the implementation of national curricula but particularly over recent years, the industry has struggled to recruit suitable staff. In early years recruits acquired practical skills through employment concurrently with part time off the job training at Certificate III followed by Associate Diploma and subsequently a Diploma level program.

Training via direct entry has been more targeted at diploma level and delivered full time for the first year then part time over the next year or two which has seen many students being enrolled directly from VCE. The program was one of the few courses available to those interested in general animal studies and became highly popular resulting in an explosion in numbers of students enrolling. There are views shared by some in the sector that graduates have shown little interest in taking up positions in the research sector or proved unsuitable to employers. This may in part be addressed with the content of the Animal Care and Management course incorporating specific skills and knowledge that industry has wanted.

Recruiting suitable candidates with sufficient skills and training is proving frustrating.

The lack of suitable graduates has led to a shortfall in recruits which has been further exacerbated by employer's reticence to advertise widely due to their fear of attracting adverse attention amongst animal activists. The dilemma is that the government does not release information about the industry that would demonstrate a true skills shortage exists. Further, being a full time program and lack of ongoing practice the level of skill has diminished over time leading

[1] Peter Maccallum Cancer Centre Research Report January – December 2007

to employer dissatisfaction with graduate's skill levels. There is also the view from students that some employers principally want Diploma graduates but actually fail to provide variety in their work routines and poor career advancement. For many graduates this leads to rapid dissatisfaction and exit from the industry.

An RTO driven pathway alone is not providing the skill level required upon graduation. An industry lead program in partnership with an RTO is a model that appears to be meeting demand.

The dichotomy between tertiary education and vocational training is reinforced in the industry's response firstly to recruitment and secondly to ensuring skills are effectively delivered to enterprise standards. To help overcome this problem one of the largest research institute's, has gone onto the front foot. Having appointed an education and training manager, they now advertise directly in secondary colleges, having negotiated a memorandum of understanding with an RTO that delivers the training they require.

While still recruiting diploma graduates the research organisation has widened its scope and choice of recruitment options. By implementing a scholarship for aspirants wishing to enter the sector and combining ongoing industry experience with some off - the - job training within the institute, students receive the skills and knowledge that can be affectively utlised.

Staff of the research organisation have qualified as workplace trainers and deliver some of the competencies internally with the RTO who engaged through the MOU to verify competence has been achieved. While in its early stages this model has proved thus far successful but its application may be limited to larger research bodies which have the capacity to staff the program.

Central to the success of this program is the negotiated agreement underpinning the scholarships that combine ongoing industry experience with off the job delivery of a number of competencies conducted in part by a qualified workplace trainer within the research institute.

While this strategy works for some this is not necessarily a panacea for training across the sector. Other circumstances such as selection criteria and mode of delivery may well have an important role to play. Flexible delivery in conjunction with good work placement is critical though not always well done. Industry needs to work closely with both the RTOs and students to gain the best outcome.

VET NURSING

Specialisations within nursing are emerging with preference for off-campus training.

Paraprofessional support for veterinarians has long been recognised as a career within animal industries and attracts potential employees of a range of ages, with estimates of around 20% with higher qualifications in excess of the Certificate IV so that it is rare to see advertisements for these in the press or online. However, 'job ad' data is arguably not the most accurate form of employment analysis available, specifically when determining skill shortage.

Historically, vets have been reluctant to release staff to attend training even after the introduction of traineeships though GOTAFE were the first to recognise this situation and responded by offering flexible delivery options across rural Victoria. Box Hill Institute has been delivering vet nursing off campus/flexible as well as on campus for at least 15 years and certainly offered traineeships by both methods from their inception. This arrangement was altered briefly in 2008 when new trainees were restricted to on campus delivery but the problems were resolved in 2009 and the flexible delivery option was reinstated for them. Box Hill Institute offers on campus training for one day per week over two years but as all students must be employed at least 15 hours per week (and most are full time) their training is regarded as largely workplace based with on campus classes to direct the overall knowledge and skills learning. Box Hill Institute advise that 2/3 of its veterinary nurse enrolments of around 300 are enrolled for off campus training and receive this training in a range of ways including online, block release attendance, on campus classroom based and workplace delivery.

Veterinary nursing is another animal based profession that suffers from poor pay and employment conditions and absence of true career paths. If there is a shortage of experienced vet nurses, a situation that is probably worse in regional Victoria compared to the metropolitan environment, it is probably attributable to family commitments, sideways move to a more lucrative position with better conditions and limited access to further education and qualification. This is an issue for the whole of the veterinary profession as well as the training providers.

Formal continuing education for general practice vet nurses to advance qualifications.

With the introduction of the national package for the animal care sector in early 2004, Diploma courses for nurses were accredited with specialisations in surgical, dental and emergency and critical care. There is evidence to suggest the emergence of vet nurses specialising in the equine sector. There has only been a limited uptake of these Diplomas due to restrictions placed on entrant's which have not changed in the latest iteration. To overcome this Box Hill Institute has developed a Victorian state accredited Diploma of Veterinary Nursing (General Practice). While there has been some disputation, the development has received strong endorsement by veterinarians representing the AVA as well as enthusiasm from practicing veterinary nurses, uptake for the course is expected to be strong.

The review of the course and re-endorsement in June 2010 has resulted in some minor changes one of which has been the inclusion of an elective competency covering the microchipping of cats and dogs. This change has been well accepted and the course now includes a practice which was first acknowledged as being an important additional skill through a Victorian accredited course in the mid 2000's. This inclusion will now make the Victorian course in micro chipping redundant.

EQUINE

The industries that work with horses are very diverse taking in as it does a number of classes of horse from thoroughbreds to standards bred (harness racing) to equestrian and recreational horses. Recreational horse numbers alone are calculated to be in excess of 200,000 in Victoria.

Farriery as an accredited program has been accredited within the state since around 1980 and last received state reaccreditation in the mid 2000's. With the absence of any national program, the Victorian curriculum was delivered within other states as well as being recognised by a number of overseas countries as an appropriate training program in those jurisdictions. With the move to reaccredit the national Animal Care and Management training package Agrifood Skills added the occupation to those already within this cohort and with the recent endorsement of the revised package is now a nationally delivered program.

The most recent proposed addition to this cohort is the occupation of equine dentistry; a job carried out by a range of industry personnel including non-veterinarian equine dental service providers, some farriers and veterinarians however there is still no nationally endorsed training on offer. Around three years ago under a project commissioned by Agrifood Skills Australia consultations have occurred with initial recommendations being made to develop a Certificate IV and Diploma to cover competencies that were seen to cover the range of job outcomes identified in the occupational analysis. To this point a draft Certificate IV has been supported by the majority of industry stakeholders. The Diploma content requires consultation work to define the range of job outcomes required. It is expected that the competency standards will be endorsed and ready for implementation after further consultation and validation.

Another gap identified in the Equine / Veterinary Nursing sector is Equine Nursing. At present there are no national competency standards. GOTAFE currently deliver the NSW accredited Certificate III in Equine Nursing (due to expire in December 2010) under license. The AgriFood Skills Australia Continuous Improvement Plan includes this cohort, but to date no project has been initiated.

CAPTIVE ANIMALS

There is the potential for recruitment of suitably qualified entrants within the captive animals sector will be impacted by the funding regime under the 'Securing Jobs for Your Future' initiative.

Of all sectors within this industry likely to experience change it is the area incorporating captive animals. Traditionally, zoos and sanctuaries are the primary employers within this sector selecting graduates from universities around the country. It has for some time been the response of this sector to supplement their practical skills with vocational qualifications at either Certificate III or IV levels at a preferred training provider. While this strategy has incurred some cost by the employer, internal training budgets have been sufficient to meet demand. Concerns are however emanating from the indirect consequences of the state government's 'Securing *Jobs for Your Future*' initiative. The substantial increase in training costs as a consequence of eligibility criteria is seen by those in the industry as having the potential to stem employment prospects in this sector.

For those sectors impacted by the full implementation of the training reforms in 2011, the question is being asked whether this new skills system could stifle demand for training and create obstacles for recruitment. Despite this issue being raised as part of the Ernst and Young review of Skills Reform in 2010, this was not noted as an issue with significant negative impact in the report to Skills Victoria. It will need to be revisited again as the full impact of Skills Reform is felt in 2011 and 2012.

While larger zoos may still be able to absorb some of these increased costs smaller private captive animal facilities (which traditionally have not funded their employees to undertake such training) may see a decline in the overall skills and knowledge within their facilities as new employees may be financially unable to bare the increased cost.

COMPANION ANIMALS

Consolidation of the pet industry into the large 'super store' model is a prominent trend.

A further sub-sector of ACM is that relating to companion animals. This term is a catch-all for a whole range of services to pets.

As has been the trend across other sectors, the advent of the 'super store' concept is becoming a commercial reality for the pet industry. In line with developments overseas the 'one stop shop' scenario is evident in the likes of Ballarat based franchise chain 'PETstock Animal Supplies'. Founded in 2002, PETstock now has over 60 stores nationwide[1].

[1] http://www.petstock.com.au/corporate-information [accessed November 16, 2010]

These businesses are taking the industry beyond the realms of the small business operator. While the sale of companion animals and merchandise remain the mainstay, veterinary services and pet grooming have been incorporated to enhance the shopping experience of the consumer. PETstock have established a prominent brand identity and reinforced this through their marketing of ancillary services such as PETschool, PETgroom, PETvet, PETtag, PETtest and PETwash.

While there is no evidence of any negative impact on the smaller operators there will inevitably be some fallout as competition intensifies within the pet, veterinary and dog grooming services.

The positions for graduates of these CAS course are often restricted and provide little career development opportunities or salaries commensurate with community expectations for a Cert III or Cert IV graduate. The challenge for industry may be one of providing wages and employment conditions that keep them engaged and happy with their roles.

The service sector and more specifically franchises are increasing in prominence.

Further indicators of the growth of the franchise sector overall is the growth in revenue and profit almost double the 2010 Consumer Price Index (CPI) figures[1]. Growth is expected to continue for the next three years with profits projected to grow by 18% over the next twelve months. HydroDog Mobile Grooming is one example of a franchise specific to this industry which has been listed in the BRW top 30 for the past three surveys. Linked to this success has been the support and commitment to training throughout the organisation[2]. Analysis of the franchise sector identified the significance of the relationship between the franchisee and franchisor. Adequately trained and skilled field support staff is seen as vital for growth of the business. Of those surveyed, 76% felt that field staff were highly effective in providing the training and support required. However 36% of those not satisfied identified low skill level of field staff as their primary concern.

ANIMAL CONTROL AND REGULATION

The area of animal control and regulation has seen substantial change and enhancement of legislation that provides for the welfare, management and control of domestic animals. The complexity of this area is best highlighted by simply looking at the skills and responsibilities as outlined in the Department of Primary Industries website.

[1] Price, Waterhouse, Coppers – How Can We Grow the Franchises of Tomorrow? September 2010
[2] HydroDog in BRWs Fastest Growing Franchises for 3 Years Running http://www.franchiseexpo.com.au/article.cfm?id=202 [accessed November 15, 2010]

> ***'Animal welfare'*** *means how an animal is coping with the conditions in which it lives. An animal is in a good state of welfare if (as indicated by scientific evidence) it is healthy, comfortable, well nourished, safe, able to express innate behaviour, and if it is not suffering from unpleasant states such as pain, fear, and distress. Good animal welfare requires disease prevention and veterinary treatment, appropriate shelter, management, nutrition, humane handling and humane slaughter/killing. Animal welfare refers to the state of the animal; the treatment that an animal receives is covered by other terms such as animal care, animal husbandry, and humane treatment. [OIE May 2008 - International Office of Animal Health] round the broad responsibilities.*[1]

The somewhat disparaging term 'dog catcher' to describe the position held by the 450 authorised officers in councils throughout the state, undermines the skills required to administer legislation and ensure animal management is maintained.

While the Certificate IV in Animal Control and Regulations covers all the requirements of Animal Control Officers within larger suburban councils there is a trend in smaller councils for the Certificate IV in Local Government to be used in preference. This is generally in recognition that animal control is only part of the job role undertaken by authorised staff in these smaller municipalities. The AgriFood Skills Australia Continuous Improvement Plan proposes to investigate the most suitable way to deal with animal control and regulation across the ACM10 Training Package and other ISC training packages. To date no project has been initiated.

Animal welfare is often an emotive area as recently highlighted in the Department of Primary Industry's Bureau of Animal Welfare bulletin to local councils warning them on the release of animals to unregistered rescue groups[2]. The bulletin puts on the table the legislative distinction between pounds, shelters and organisations such as the Dog Rescue Association of Victoria. It also establishes the credentials of the sector in terms of meeting not just the legal obligations of the individual but reinforces the basis of training programs that ensure animals are properly cared for.

[1] http://www.dpi.vic.gov.au/dpi/nrenfa.nsf/linkview/4caada78c5e52769ca256d780013efcf6166e48f26cf64daca256edd0082edf1 [accessed November 22, 2010]
[2] *'Animal rescuers say letter is death threat'* The Age, November 21, 2010

CONSERVATION & LAND MANAGEMENT - KEY CHANGE DRIVERS AND DEVELOPMENTS

Issues surrounding the environment and conservation continue to be front and center stage with climate change heading the list after years of drought across Victoria. Success of the Greens political party at the recent national elections will undoubtedly ensure the issue continues to attract attention over forthcoming years. The threat of wild fire and problems with water availability culminating in the publication of the *Guide to the Murray Darling Basin Plan* in September 2010 will also ensure that these issues also continue to exercise the minds of both peri-urban and rural communities.

In relation to conservation and environmental protection there are numerous groups and organisations with interests in or responsibilities for the sector but the major employers are Department of Sustainability and Environment (DSE) and Parks Victoria which have the responsibility of overseeing increasingly large areas of public land across the state as well as Catchment Management Authorities (CMA's). The strategic drivers identified by DSE encompass the management of Victoria's water resources, increasing fire threat, environmental protection, and adapting to climate change[1]. This theme will have direct implications for the provision of training and skills development to address these targeted areas.

The expansion in area of terrestrial and marine management by Parks Victoria would indicate the need for comparable increase in the need for skilled labour to implement the department's management obligations.

Parks Victoria's management responsibilities are extensive and expanding, contributing an estimated $1 billion annually to the Victorian economy[2]. The 2010 report indicates that in the last year alone 4 additional national parks have been created as well as expansions to 3 other national parks. In all, over 100,000 ha have been added to parks within the state adding to the four million hectares of parklands under Parks Victoria's management.

When discussion arises concerning environmental preservation attention frequently turns to terrestrial habitat and the state of inland rivers, however increasingly the state government is creating marine parks also along Victoria's coastline. Parks Victoria as custodians of nearly 300,000 hectares of bays and rivers represented by 13 marine national parks and 11 marine sanctuaries. It is also responsible for registered Aboriginal heritage sites and numerous historic places and gardens.

Training specific to meet the needs of bushland fire fighting crews would address the existing gaps in the Public Safety Training Package.

DSE as Victoria's lead environmental policy maker will inevitably influence the policy direction taken by Parks Victoria and the CMAs. The department's plays a pivotal role in supporting the environmental sustainability objectives of the State Government and as a consequence will influence the direction of training in

[1] Parks Victoria Corporate Plan 2010-11 to 2012-13
[2] Parks Victoria Corporate Plan 2010-11 to 2012-13

conservation and land management. DSE's reputation as a world leader in bushfire management is well established and to maintain this prominence requires a commitment to training. The Department as an RTO in its own right has a well developed training program to meet the specific needs of its bushland firefighters. The Fire Training Management System (FTMS) is an internal system of DSE which aims to provide a rigorous system for the training, assessment and accreditation of the skills, knowledge and experience of Departmental firefighters. Being responsible for 3000 'fire staff', DSE draws upon existing competencies from the Public Safety Training Package but is unable to award a full certificate due to the package's customisation rules[1]. Even though competencies within the Public Safety Training Package are utlised the package focus is very much on urban fire fighting skills. Unlike Parks Victoria, DSE is funded internally to conduct training and will not be directly impacted by external fee increases. Though the training does not lead to a qualification as such there is some interest from within these government departments to establish a state and possibly nationally recognised qualification.

Parks Victoria and DSE continue to be dependent upon a large volunteer workforce to fulfil their statutory obligations. With the findings of the Victorian Bushfires Royal Commission agencies have responded with a commitment to increasing the numbers of trained staff to manage bushfire and planned burning operations.

Due to the high levels of volunteer labour in the sector employment opportunities have been limited or of a short term/seasonal nature however this is set to change. The recent bushfires have focused government's attention on the vulnerability of the state to wildfire and following the publication of results of the Bushfire Royal Commission the government is committed to spend around $350 million on fire management.

The DSE and Parks Victoria have committed to employing and training an additional 123 ongoing Field Services Officers (FSOs) to assist in the implementation of the planned burning program and the suppression of bushfires in Victoria[2]. The increase will complement the approximately 1,400 trained bushland firefighters and 700 seasonal project firefighters who carry out bushfire suppression and prevention works such as planned burning. Other employment opportunities are to be found with CMA's in a range of fields including catchment management officers and Landcare facilitators.

Fire management and control is a state responsibility but in relation to water both state and federal governments have a stake in this area. Control of water in large parts of the state north of the divide have through intergovernmental agreement, been ceded to the Murray Darling Basin Authority (MDBA) which has recently published *Guide to the Murray Darling Basin Plan* in which it has tentatively proposed the return of 3999 to 4000 gigalitres to the environment with a suggested up to 37% reduction in irrigation entitlements.

[1] DSE Fire Training Management System manual – January 2010
[2] http://www.dse.vic.gov.au/DSE/nrenfoe.nsf/childdocs/-7404AF170FE4FD60CA256DA6000E2DD3-7072CD79BF14AB4B4A2567CB000DB476?open [accessed 11 November 2010]

Since a high proportion of secure water for the Lower Murray emanates from Victoria reaction from rural communities has been predictable.

There is no question that reduced flows due to the recent drought has resulted in the decline of habitats particularly wetlands along flood plains within Victoria but publication of the “science” behind the decision making will reveal a series of estimates of flows rather than strong data. The problem stems back to the 80’s and early 90’s with the demise of the overarching state water authority and the removal of many of the stream gauges and the need to transfer data from gauged streams to others in the general area. With the backlash from a number of fronts the MDBA has pushed back publication of the plan till 2010.

Problems associated with water has pushed CMA’s more into the limelight and employment within these has increased recently as catchment management officers and Landcare facilitators (Caring for Country etc). These positions are funded by a mix of state funds and federal government grants.

The impact of climate change and strategies to mitigate the impact it will have is an area where conservation will have an increasingly important role.

Problems associated with climate change are considered by scientists to be related to emissions associated with human activity, (carbon dioxide, methane etc) and while around 80% of these emissions are caused by static power generation which are not able to be directly ameliorated by the conservation movement, it is within the government policy area that these reduction need to be addressed, nevertheless there is a good deal of discussion within the community centered around increase in restoration of remnant vegetation native forests plantation plantings and soil sequestration an area where those involved in conservation have a more direct influence.

Though the Conservation and Land Management training package is meant to meet the needs of industry such as Parks Victoria it is evident that the training package is unable to provide the breadth of vocational skills required.

In relation to programs which provide for those wishing to establish careers or undergo further training at the TAFE level state government statistics circulated for 2009 included a number of statewide accredited programs amongst which are those listed as qualifications in sustainability. Closer analysis reveals that these have very little resonance with conservation and land management and reveal a provenance within manufacturing rather than with the field of conservation. The statistics are also interesting in that they reveal a substantial number of statewide accredited courses which are characterized by low enrolments.

The majority of enrollments to this point appear to be at Certificate III and Diploma level In relation to Certificate III while there are over 600 enrolments the average SCH for these students is relatively low (approximately 50 hours) while government funded programs with half the number of enrollees display average Student Contact Hours (SCH) commitments consistent with a normal traineeship profile. It is interesting to note that there were no enrolments at the Certificate II level in 2009

With respect to education programs for those seeking careers in the field paraprofessional, such as animal technology and veterinary nursing statewide accredited advanced certificate and more latterly diploma programs in conservation have been available since the early 80's and predating national qualifications by some 20 years. The course itself guided by an industry committee maintained a balance between theory and practice and general studies with those covering water and fire resulting in a steady stream of graduates gaining employment with public service and private companies.

The introduction of the national curriculum saw the emphasis on these two areas (fire and water) reduced substantially and in the absence of a program to ensure issues relating to water the then State Training Board acceded to a request from the PSV standing Committee for a state accredited diploma program to be developed. The absence of the opportunity for students wishing to undertake studies in sustainability in order to pursue a career in catchment management through a national qualification only adds urgency to the need to maintain the ongoing delivery of the state accredited diploma program.

As with water, competencies which provide training relating to fire management are limited even in the revised package. Members of the CLM Standing Committee have been conscious of this omission for a number of years and have been raising this issue with the national industry training board thus far to no avail. This has forced a number of RTO's to address this problem by offering additional skills for their students through enrolling students in competencies from other packages or through cooperative arrangements between themselves and DSE staff in order to enhance employment opportunities such as membership of summer fire crews.

Concerns have been raised within industry that Victoria's 'Securing Jobs for Your Future' initiative is likely to severely impact on future training development within some sectors.

Recent changes in fee arrangements will make the provision of these additional competencies more expensive to students. Complicating this is the linking of EBAs with training outcomes which under the eligibility criteria associated with Victoria's 'Securing *Jobs for Your Future*' initiative may have a negative impact on training uptake. For some of the major players in the sector the vocational skills are for many staff an addition to their tertiary qualifications. Parks Victoria estimates that 76% of staff currently undertaking training would be impacted upon the reforms once fully implemented in 2011[1]. Under the current eligibility arrangements these students will be unable to access subsidised training places and effectively become full fee paying students. Budgets of the likes of Parks Victoria will be insufficient to meet the financial costs associated with training.

[1] Pers. Comm. Andrew Nixon Parks Victoria November 18, 2010

Problems associated with increased cost to students of training have also become more evident to staff of RTO's over the last 12 months. The concerns are also being reiterated by employers who are conscious of the implications of eligibility criteria under *'Securing Jobs for Your Future*'. Data from the NCVER would suggest that under the funding model operating in Victoria, just over half of students enrolled in AQF IV Conservation and Land Management qualifications have tertiary and higher vocational qualifications at time of entry[1]. This would seem contrary to the intent of lifelong learning and accessibility to skills development.

It is worth noting that Parks Victoria like many government agencies has an aging workforce (45% > 50). Younger staff, 20-35 year old, is the smallest age group. The majority of these staff comes to the agency with some sort of tertiary qualification (TAFE – University). Whilst trained in a discipline (conservation / environment) they often do not have job specific vocation skills. For example they may have been trained in eco-system and invasive plant species but they do not come to us with the tickets for control (chemical user accreditations / 4WD). They may understand protected area systems but they are not trained in specific legislation or enforcement/ compliance skills. The provision of vocationally oriented skills is important for them on their arrival at Parks Victoria.

RTO's operating in coastal areas has been providing additional training for a number of years through the statewide accredited Course in Coastal Management. With the introduction of the new fee regime it will be interesting to follow future enrolment patterns in this course. In relation to marine paraprofessional training, there is little evidence that the national skills council has attempted to address training requirements for aquatic environments to this point. This area seems to be the province of the higher education sector albeit that the slant of these programs is more towards marine biology.

Though employment is an important outcome of this initiative, training that reflects the needs of indigenous employment programs will need to reflect their culture and heritage.

There is clear evidence that DSE has instigated partnering initiatives with Indigenous Australians and has a commitment to increasing employment and career opportunities within DSE. The DSE '*Diversity (Inclusion) Action Plan 2009-2012'* outlines the department's objectives to:

- Increase employment and career opportunities for Indigenous people within DSE
- Involve traditional owners in the management of DSE programs and services

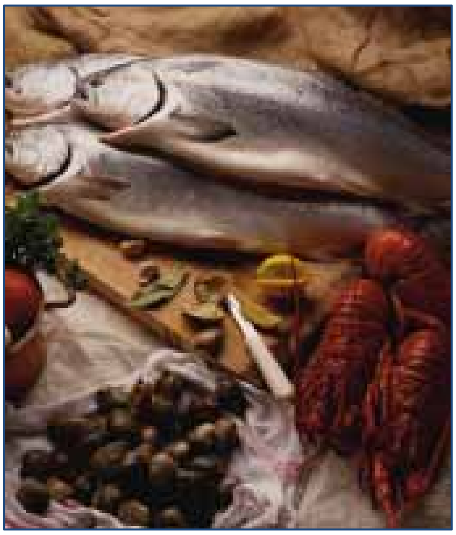
[1]http://www.ncver.edu.au/resources/vsi/vsi_table.html?table_list_class_type_id=1&table_list_table_nr=1&table_list_filter_id=47%2B2523&filter_name=RTD40102+-+Certificate+IV+in+Conservation+and+Land+Management&classification_name=Training+Package [accessed November 11, 2010]

- Develop career pathways within DSE for existing Indigenous employees
- Promote the aspirations and skills of Indigenous communities within DSE.[1]

The *Yorta Yorta Caring for Country Rangers Team* is a project undertaken by Parks Victoria that is indicative of how the *DSE Indigenous Partnership Framework (2007-2010)* is engaging local Aboriginal communities[2].

[1] DSE Diversity(Inclusion) Action Plan 2009-2012
[2] ***Yorta Yorta*** *Nations* ***Caring for Country Ranger Team*** *Positions* http://www.premier.vic.gov.au/component/index.php?option=com_content&task=article&id=9303.html [accessed November 15, 2010]

SEAFOOD & AQUACULTURE- KEY CHANGE DRIVERS AND DEVELOPMENTS



In the 2010 *Victorian Commercial Fishing Statement of Intent* the major themes reinforced throughout this document is the 'Sharing', 'Securing' and 'Growing' the valuable state fishing resources. The environmental changes impacting so many sectors across the rural sphere are very much central to the management strategies being implemented and endorsed by government agencies, commercial operators and recreational fishers. There is no question that the industry is facing many challenges and in line with this is the consequential realignment and in some cases the rebuilding of declining seafood stocks.

It is the opinion of the Food and Agriculture Organisation (FAO) that worldwide fisheries are facing extreme stress. Worldwide the aquaculture industry is one of the fastest expanding agricultural industries with FAO data suggesting growth in excess of 8.8% per year[1].

Victoria manages its fisheries sustainably and aquaculture is another way of providing product to the market. The view is clearly articulated by the Victorian Government that the commercial fishing industry, which includes the wild catch sector, has a 'bright future'[2].

Historically the Victorian Aquaculture industry has been a relatively small concern '…with a maximum of only 20% of fish consumption having been caught or grown in Victoria'[3]. It is worth noting that this figure is now closer to 8%. Importation of foreign sourced aquaculture and wild catch product accounted for approximately 50% of overall fish consumption.

Biosecurity, health management and surveillance practices related to the effective detection, containment and management of pest and disease outbreaks will be an area demanding ongoing training commitment across all sectors of the industry.

The significant impact of the Abalone Viral Ganglioneuritis (AVG) is still being felt throughout the abalone industry however early signs suggest that the progression of the disease has stabilised and populations are slowly recovering. The impact of the disease cannot be understated with the 2007-08 Total Allowable Commercial Catch (TACC) data estimating the landed value at around $28.5 million compared with values of $60 million in 2006 when the disease was first confirmed[4].

The vulnerability of the wild seafood stock has been further threatened from increased numbers of sea urchins in which increased numbers of sea urchins on a reef off the coast of east Gippsland have instigated a joint management program between the Department of Fisheries and abalone divers. The creation of 'urchin barrens' can threaten the survival of other marine species hence the

[1] FAO Fisheries Department. State of world aquaculture 2006.FAO Fisheries Technical Paper. No. 500. Rome, FAO. 2006. 134p.
[2] Dept. of Primary Industries, *Victorian Commercial Fishing Statement of Intent*. September 2010.
[3] Dept. of Primary Industries, Victorian Aquaculture Strategy, 2008
[4] Fisheries Victoria – Commercial Fish Production Information Bulletin 2007-2008
[7] http://www.dpi.vic.gov.au/DPI/nrenfaq.nsf [accessed November 8, 2010]

joint removal and monitoring program of one half of the affected reef[1].

The scallop industry has recently come to heightened public attention with recent media reports claiming that 24,000 tonnes of scallops worth $70 million are dead as a result of seismic testing in Bass Strait. It should however be premised that evidence to support these accusations are yet to be proven. It is indicated that an environmental report undertaken prior to the seismic surveying suggested that such activity has no proven impact on scallops[2]. The sensitivity of the topic is further highlighted in reports that scallop fisherman are planning to launch a compensation claim through the courts[3]. Scallop bed surveys are being conducted in the Commonwealth Scallop Fishery to determine whether any damage has in fact occurred.

A need for improved training opportunities around fish health management for aquaculture has been identified. Growth and rapid expansion could be hindered without the specialist skills available to support the sector. Developments in marine aquaculture hatchery production may require specialist training at AQF III through to Diploma levels.

There are encouraging developments in the shellfish sector with significant joint government and commercial investment being directed towards shellfish production. The development of a pilot scale shellfish hatchery at DPI's Queenscliff Centre is producing positive results with technology to be transferred to industry to apply at a commercial scale once the pilot is concluded. Supporting this is the future release of about 460 hectares of new water which will facilitate the expansion of marine aquaculture. While the technology behind the development of the shellfish hatchery has required higher level research skills there is an expectation that at the commercial scale the requirement for specialised skills associated with stock health management and hatchery production will be essential[4]. The collaborative arrangements between DPI and the private sector in the development and commercial implementation of new technologies are in no way a phenomenon unique to this industry though arguably it is an alliance that is vital if the industry is to grow.

Climate Change may see changes in catch, pest and disease incursions and business practices.

Climate change is impacting directly with this industry as is the case across all primary industry sectors. Changes in water temperatures, salinity levels, extended drought, and natural disasters such as bushfires are all contributing to constraining the development of the sector.

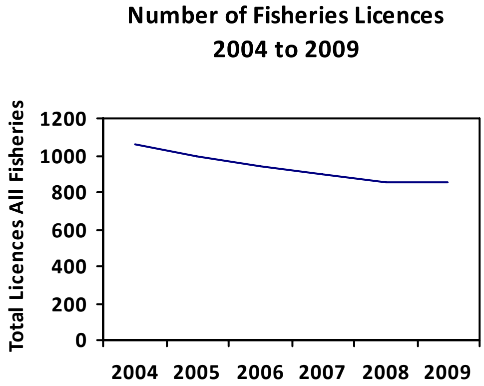
Maintaining and growing lucrative domestic and export markets is required for expansion. The success that underpins this will be in the industry's capacity to look at new value adding potential to their products as well as developing an understanding in the branding and development of efficient supply chains. Closely aligned with this will be ensuring the continuity and quality of supply to domestic and

[1] A Prickly Problem, http://abc.gov.au/rural/vic/today.htm [accessed November 5, 2010]
[2] ABC News '$70m scallop fishery wiped out' http://www.abc.net.au/news/stories/2010/11/02/3054830.htm [accessed November 5, 2010]
[3] 'Compo call for fishy business' The Weekly Times, November 10, 2010
[4] Pers comm. Srecko Karinfilovski November 4, 2010

Food safety training (Prime Safe) and mechanisms to facilitate compliance with seafood safety standards will be vital for assuring the maintenance and expansion of domestic and international markets.

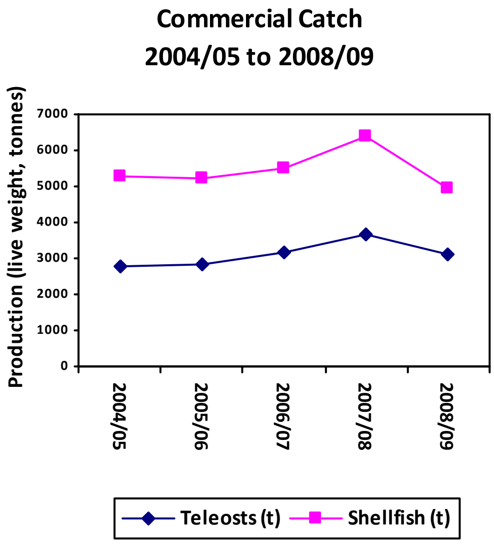
overseas markets. Food safety and compliance with local and international seafood safety standards should be seen not just as an issue driven by enforcement and legislation but by industry focused on protecting and developing these markets[1].

The seafood industry continues to experience difficulties associated with the aging of its workforce and the subsequent loss of skills. Compounding this is the recovery of the mining sector and the loss of skilled labour from the industry. Data extracted from 'Fisheries Victoria Commercial Fish Production Information Bulletin November 2008' would suggest that there has been a decline in number of fisheries licences although this would appear to have stabilised since 2008[2].



While contraction of some sectors has occurred the need for skills development to replace those leaving the workforce is essential. Biosecurity, value adding and skills in deckhand operations and OH&S are an ongoing requirement.

The reduction in inactive licences has been deliberate and acknowledges that too many fishing licences were given out in the early years. The decline in license numbers is also in response to gaining a better understanding of what ecosystems can withstand in terms of fishing pressure.



[1] Victorian Aquaculture Strategy – The Action Plan 2008
[2] Fisheries Victoria Commercial Fish Production Information Bulletin November 2008

Production data over the period 2004 to 2009 suggests that the commercial catch is stable and that management strategies overseen by Fisheries Victoria are having the desired impact. Though the chart below may suggest a decline from the 2007/08 period it is important to note that all scallop fisheries are naturally 'boom and bust' which means that populations are able to be fished down to low levels and will 'bounce back'[1].

In a broad sense, indicators would suggest that the fisheries industry is experiencing a period of transition and correction in response to global influences. There has also been a positive shift in Australia's recognition of its cultural heritage and the need to engage Aboriginal communities into the matrix of industry development and expansion. The draft '*Aboriginal Fishing Strategy Explanatory Notes – 2010*' being developed by Fisheries Victoria identifies strategies that will promote bilateral engagement between the Aboriginal community and Fisheries Victoria[2].

The integration of cultural and ecological knowledge into education programs will facilitate the promotion and understanding of Aboriginal customary fishing. There is also the need to engage young Aboriginal people in areas of fisheries management, policy, research and the fishing industry.

The strategy while still to be finalised, signals the potential for training in the recognition, management and economic development of Aboriginal communities in the fisheries industry. The potential for cadetship programs operating through Fisheries Victoria would be developed to attract young Aboriginal people who would undertake on-the-job and formal training. Conversely there is a need for 'cultural competence' training of staff within Fisheries Victoria and like agencies, to broaden the awareness of Aboriginal culture and heritage and provide the confidence in those who are engaged with Aboriginal people and groups.

[1] Pers. Comm. Kylie Wohlt Principal Policy Analyst, Fisheries Victoria, November 17, 2010
[2] Draft Aboriginal Fishing Strategy Explanatory Notes – 2010, DPI Fisheries

APPENDICES

APPENDIX 1 – INDUSTRY ADVISORY NETWORK

Agriculture

James Dennis - VFF Pastoral Group
Russell MacKenzie - VFF Grains Group
Gil Fryatt - Farming contractor (Warracknabeal)
Peter Clark - Grain grower (Nhill)
Barry Batters - Grain grower (St Arnaud) / Chair of Grains Industry Training Network
Frank O'Connor - VFF Education Committee
Jenny McMillan - United Dairyfarmers Victoria
Jenny Frederiksen - United Dairyfarmers Victoria
Nickie Berrisford - Grains Industry Training Network
Graham Shearer - Shearer Woolhandler Training Inc
Tony Fahy - Department of Primary Industries
Sam Beechey - The Australian Workers Union
Brendan Mahoney – Wool grower (Mansfield)
David Milburn – Vegetable Growers Association
Jack Byrne - Wool grower (Axedale)
Tom Kelly - Shearer (Kilmore)
Don Bennet - Woolclasser (Bendigo)
Colin Coates - Wool / Grain grower VFF Grains Council
David Minnis OAM - MD 888 Exports / Minnis Horticultural Services
Alan Roberts - Chemical Standards, DPI (Bendigo)
Tony Fahy - President Australian Pig Veterinarians Pig Health and Research Unit DPI (Bendigo)
Meg Parkinson - VFF Poultry
John Bourke - VFF Pig Group
Penny Hendy - Seed producer (Katunga)
Tony Dodson - Agrifoodskills Australia
Robert McCrae – Grain farmer
Warrick McClelland Grain grower /Sheep producer (Birchip)
Lyn Simons
Kieran Ransom – DPI Bendigo
Penny Hendy – Grain farmer
Merna Curnow – Grain farmer, Member GRDC Southern Panel
Athol Frederick - Landmark Bendigo
Tony Imeson, Executive Officer VGA Vic. Vegetables Victoria

Animal Care & Management

Andrew Young - Pet Industry Assoc. of Aust.
Tracy Helman - Bureau of Animal Welfare
Ursula Alexander-Smith - Veterinary Nursing Co.Aust
Jane Bindloss - Veterinary Nursing Council of Australia
Bronwyn Macreadie - Zoos Victoria
Rick Walduck - Veterinarian , MD Central Animal Records
Denise Garratt - Help for Wildlife
Malcolm Scheele - City of Knox
Basil Theofanides – Aust. Assoc. of Professional Dog Trainers
Bill Harkin - Australian Veterinary Association.
Dr. Celia Turnbull Manager Animal Sciences
Goulburn Ovens Institute of TAFE
Dr. Susan Maastricht, Centre Manager, Biotechnology and Animal Sciences, Box Hill Institute of TAFE
Dr. Trish Stewart
Graham Farley – Equine Dentist, National Reference Group Equine Dentistry
Terese Johns - Manager Training and Education Walter and Eliza Hall Institute
David Berry - Lost Dogs Home
Colin Smith - Blacksmiths and Farriers Association of Australia
Michele Jackson - Consultant At. All. Events Ltd

Horticulture

Mike Hoy - Horticulture Training Council
Ron McCartney - Sportsturf Consultants
Wayne Williams - Melbourne University
Michael Borowick - The Australian Workers Union
Jos Duivenvorden - Director Presentation and Assets City of Greater Bendigo
Steven Potts - EO NGIV
Peter Harrington - Manager Oasis Turf
Peter Jones - Parks Development Officer Macedon Ranges Shire Council
Phil Ford - Consultant Turf Industry
Peter Fitzgerald - Victorian Turfgrass Consultancy Services
Michael Walker CEO Biogreen / Turf Grass Association of Australia
Jim Johnson NGIV/Oasis Nurseries
Mike Smith - Manager Strategic Planning and Capital works City of Greater Dandenong
Ken Chalmers - Coordinator Recreational Planning Wyndham City Council
Digby Richardson - Open Space Planner Wyndham City Council
Ilsa Mathews - Manager Human resources Proteaflora
Roger Boyle - Plants Plus Garden Centres -
John Danks /Lowes / Woolworths
Graeme Izzard - Manager Arbortrim
David Greehill - CEO Victorian Golf Association
John Naylon - EO Australian Golf Course Superintendents Association
Simone Staples - Training Manager AGCSA
Pam Nyman - Office Manager Sevron Environmental Services
Noel Mansfield - Mansfield's Propagation Nursery
Julie Edmonds - EO Landscaping Victoria
Clive Larkman - Larkman Nurseries
Igor Grattan - Assistant Secretary Victorian Branch Australian Services Union
John Brereton Education Centre Gippsland
Craig Hallam - Managing Director ENSPEC Environment & Risk, Arboriculture Australia Board Member

Conservation & Land Management

Geoff Smith - Water Industry Consultant
Andrew Buckley – Manager Fire Training, DSE
Andrew Nixon - Parks Victoria
John Flett - Goulburn-Murray Water
Warrick Bates – CLM trainer BRIT
Michael Smith - Manager Human Resources Parks Victoria
Graeme Hickingbotham - Training Manager Conservation Volunteers
Tony Misson - Bendigo Regional Institute of TAFE
Steve Mulligan - Australian Workers Union
Anne Wiltshire - NMIT
Geoff Smith - Water industry consultant / previously Thiess

Fish Harvesting & Aquaculture

Ross McGowan – Seafood Industry Victoria
John Mercer – Department of Primary Industries
Srecko Karanfilouski - Fisheries Victoria (aquaculture)
Melissa Schubert - Fisheries Victoria (wild catch)
Chris Padovani – Fisheries Victoria (wild catch)
Kylie Wohlt – Principal Policy Analyst (Fisheries Victoria)

APPENDIX 2 – INDUSTRY SKILL NEEDS REPORT TIMELINE

Development process	**Timing**
Previous response completed and submitted	February
Collect research, statistical data and public media material Collect informal evidence from established network	Ongoing/ constant
Note preliminary references at formal standing committee meetings	Feb-Mar
Review SV publication of Industry Training Needs Profile	Jun-Jul
Begin formal process requesting industry advice from PSV Standing Committee members	Jul-Aug
Begin initial drafting process	Sep
Verification and honing of data with key industry representatives and standing committee members Major draft development and verification of content	Oct-Jan
Submission to SC members for final verification	Jan
Submission of final draft to SV	Jan
Receive feedback from SV and modify/restructure draft if necessary	Feb
Submit to PSV Executive for final verification	Feb
Final report submission	30 Mar

APPENDIX 3 - SUMMARY INDUSTRY SECTOR GRIDS

NOTE: Qualifications / Skills highlighted in Bold-Italics in Training Demand & Delivery Consequences column are considered to be new units or existing units that require substantial modification to meet the skill requirements of the sector.

Rural Production (Agriculture)			
Key Change Drivers & Developments	**Industry & Business Response to Changes**	**Skills Implications**	**Training Demand & Delivery Consequences**
Increasing levels of global competition to meet demand. The likelihood over the next ten years, of major changes in property ownership in rural areas.	Changes in property size, ownership structures. Increased foreign ownership of agricultural properties.	Increased demand for professionally trained managers and staff with a range of production skills.	• Operator level training (Certificate III) and Certificate IV and Diploma level training of potential managers of cropping, livestock, dairying and integrated farming operations throughout the state.
Increased importation of overseas produce (meat) and subsequent quarantine risks.	Limited outbreaks have heightened industry concern on lowering quarantine barriers.	Increased knowledge and skills in pest and disease management. Ability to identify outbreaks of exotic disease, skills in the identification of exotic disease in animals, quarantine and reporting procedure.	• Delivery of Skill Sets / Competencies at Certificate IV and Diploma level. • ***Development of national biosecurity competencies related to identification of exotic pests and disease.***
Acute shortages in trained and skilled agricultural workers.	Temporary reduction in on-farm employment. Labour being sourced from Western Australia to harvest record grain crops.	Long-term increase in need for skilled staff at operator level.	• Delivery of Skill Sets / Competencies and operator level (Certificate III) programs in Agriculture (Poultry and Pigs). • Delivery of Skill Sets / Competencies from Course in Agriculture (Fodder Conservation and Management).
Proposal to equate a VCE qualification with a vocational Certificate II outcome.	Industry concern that fundamental vocational skills and prerequisite competencies that underpin a trade qualification will impact on students and their eligibility to fully subsidised training.	Long term loss of skills Inadequacy of skills to enter the industry.	• Competencies at Certificates II that underpin Certificate III competencies.

Rural Production (Agriculture)

Key Change Drivers & Developments	Industry & Business Response to Changes	Skills Implications	Training Demand & Delivery Consequences
Securing Jobs for Your Future and contestability of government training funds impacting on students with higher degrees requiring industry prescribed vocational skill sets. Rationalisation of training delivery across many RTOs	Concerns that there will be a decline in graduates with sufficient technical skills to undertake employment. Industry disengaging from training and skill development due to increased cost. Viability of public RTOs delivering to 'thin markets'. Loss of skilled teaching workforce as a result of program closures.	Inability and reluctance to undertake further training. Decline in technical and teaching expertise within RTOs Specialist training programs not being offered.	• Competencies at Certificates II that underpin Certificate III competencies. • Certificate IV Training and Assessment
Impact of the Murray Darling Basin Authority's water strategy and water security issues.	Long-term changes in farming practices in irrigation areas e.g. dairy.	Increased demand for new skills to facilitate transition to new farming practices.	• ***Development of a national training program for agronomists.*** • Delivery of competencies in Rural Business Management training. • Delivery in Skill Sets / Qualifications to address shifts in regional farming practices
Increased government regulatory environment (animal welfare, OH&S etc.)	Modification of production practices and investment in on-farm infrastructure to meet regulatory requirements. Animal welfare practices heavily scrutinised and questioned.	Skills in animal welfare. Skills in accreditation systems and quality control guidelines.	• ***Training to provide skills in tracking, monitoring and evaluation of on-farm produce.*** • Training in codes of practice and quality control • Certificates III, IV and Diploma training in animal welfare and animal husbandry practice.
Revival of the wool / prime lamb market.	Wool prices returning viable levels encouraging farmers to return to wool and prime lamb production and build up sheep numbers.	Skills in wool handling, shearing and wool classing, market assessment.	• Certificates II to IV in Wool Handling, Shearing and Wool Classing

Rural Production (Agriculture)

Key Change Drivers & Developments	Industry & Business Response to Changes	Skills Implications	Training Demand & Delivery Consequences
Rapidly changing technology and sophistication of modern farming systems.	Increased use in specialist contract labour. Reluctance to adopt new technology due to fear or lack of understanding of cost benefits.	Skills in the adaptation and implementation of new technologies. Skills in the operation of new machinery and equipment. Skills in cost benefit assessment and analysis associated with implementation of new technologies.	• Use of existing competencies to provide specialist training in new and emerging technologies. • ***Development of national competencies at Certificate III and IV in specialist machinery and technologies (GPS, Yield Monitors, telemetry systems, spray systems, protein and moisture analysis)***
Changes in grain industry marketing (quality control and monitoring procedures.	Increase in on-farm storage of grain/oilseeds and private treaty sales to producers (beef/dairy etc) and the bio-fuel sector. Increased use of risk management tools such as futures contracts.	Skills in handling grain, segregation of grain/fuel oilseeds, selection of pesticides for long term storage on-farm, selection of appropriate storage facilities. Skills in risk analysis to evaluate the increasing complexity of the global economic environment. Greater understanding and skill in use of future contracts.	• Targeted courses in the specific skills outlined in column 3. • ***Courses in risk management and use of forward contracts.***
Introduction of government CPRS ‘carbon credit’ scheme for rural industries.	Cost / Benefit of allocation of land to long-term forestry. Modification of farming practices. Crop selection and stock breeding. Soil sequestration.	Skills in species selection, establishment, maintenance and management of these long-term “crops”. Knowledge of carbon auditing process and implication of carbon footprint on farming operations.	• ***Training / Competencies to provide skills in agroforestry establishment and management of “carbon sinks”.*** • ***Training / Competencies in carbon auditing.***

Rural Production (Production Horticulture)

Key Change Drivers & Developments	Industry & Business Response to Changes	Skills Implications	Training Demand & Delivery Consequences
Heightened awareness of biosecurity issues and outbreaks.	An outbreak of introduced pests and disease is threatening the viability within some parts of the industry.	Skills required detecting, containing and controlling biosecurity risks.	• ***Skill Sets / Competencies for existing staff to increase awareness of biosecurity and risk control measures.***
Low unemployment levels and continuing public perception issues drive shortages in skilled labour markets within fruit and vegetable growing sectors. Management skills and production skills will be in demand as producers grow in size.	Despite extensive discussion with government representatives at all levels, industry has only been able to overcome skills shortages on a seasonal basis. Larger enterprises are struggling to find people with the human resource management and production management skills.	Skills at operator level in crop establishment and maintenance throughout the production cycle. Skilled machinery and equipment operators for sowing, spraying activities are needed. Human resource management skills. Production management expertise.	• Pre-apprenticeship at Certificate II in Production Horticulture. • Certificate III in Production Horticulture for the fruit and vegetable sub-sectors. • Skill Sets / Competencies to up skill existing operational staff undertaking specialist crop production operations including equipment maintenance and operation. • Human resource management training.
Increasing land value and growth of niche producers is seeing an expansion into service sectors.	Niche producers unable to expand production are being encouraged to engage in agri-tourism activities linked to production including berry-grazing, farm-stay etc.	Skills associated with promotion, legislation, food safety, planning issues and customer relations to augment production operations.	• Competencies from hospitality/tourism packages at Certificates IV and Diploma to compliment production horticulture operations.
Expansion of markets into niche production with skill development not being addressed in the training package.	Continued shortage of qualified/skilled staff due to absence of training to meet the needs of industry is limiting industry expansion.	Skills associated with the growing of dried fruits, truffles and heritage vegetables.	• Certificate III course in Production Horticulture including specific post-harvesting competencies in heritage vegetable and high value specialist produce.
Drought and economics are driving larger and more highly sophisticated enterprise operations which are impacting on the viability of smaller establishments.	Many smaller growers exiting the industry, larger enterprises are calling for training to provide skilled supervisors within increasingly larger operations. Diversification into hydroponics crop production to manage water availability problems.	Skills are required at supervisor level in crop establishment and maintenance throughout the production cycle.	• Certificate IV training to up skill existing employees in technical and supervisory aspects of enterprise operations. • ***Specialist stream in hydroponic food production at Certificates III and IV***.

Rural Production (Production Horticulture)

Key Change Drivers & Developments	Industry & Business Response to Changes	Skills Implications	Training Demand & Delivery Consequences
Limited access to quality irrigation water. Release of the Murray Darling Basin Authority's guide outlines the reduction in the availability of environmental water for agricultural purposes and increase in environmental flows through the river system.	The requirement for producers to have water quality and delivery systems monitored and tested for contaminants. Reduced volumes of water not only for production, but also for the environment.	Design, installation and management of increasingly sophisticated irrigation systems. Analytical and monitoring skills in water monitoring and delivery systems. Skills associated with the growing of vegetables and post harvest operations required, particularly in the Werribee district.	• ***Skill Sets / Competencies to satisfy requirements of certification e.g. HACCP under various categories of irrigation professional***. • Skill Sets / Competencies to satisfy requirements of certification and quality control e.g. HACCP. • ***Certificates III and IV Skill Sets /Competencies to satisfy requirements for water monitoring, analysis, interpretation and rectification of delivery systems***.
Community demand for high quality fresh fruit and vegetables and concern for food safety.	Re-examination of on-farm food production and handling practices, in turn leading to the development of food safety programs.	Skills in selection, handling and application of chemicals and residue minimisation to comply with MRLs.	• Competencies in safe handling of chemicals and risk management practices.

Amenity Horticulture

Key Change Drivers & Developments	Industry & Business Response to Changes	Skills Implications	Training Demand & Delivery Consequences
Consumer demand is driving growth in vegetable seedling and potted colour across retail nursery sector. Encouraging spring rains is stimulating consumer expenditure and demand for plants.	Industry is suffering critical staff shortages with a lack of skilled workforce and technical horticultural professionals. Recruitment strategies coordinated by NGIV are finding it difficult to attract suitable candidates.	Horticultural skills at all levels from basic entry level skills through operational trade, technical and supervisory skills in nursery. Specialist technical skills in plant culture.	• Pre-apprenticeship programs aimed at attracting new employees into the horticultural workforce. • Certificate III in Retail Nursery • Certificate III in Wholesale Nursery
Consolidation of larger production nurseries and garden centre businesses.	Garden Centres that cater focus not just on consumer purchase of green life but consider consumer experience. Garden Centres are diversifying into café/restaurants, hardscape materials.	Skills in business management, marketing.	• Certificate IV and Diploma training in Retail Nursery.
Realisation that water restrictions and Climate Change impacts will be ongoing and will drive consumer demand.	Rise in numbers of businesses which have been established to cater for the water conservation needs. Demand for alternatives such as grey-water recycling systems and increasingly more efficient watering technologies. Greater emphasis on drought tolerant and disease resistant plant cultivars. Greater emphasis on energy conservation, water capture and impact of 'urban heat islands'.	Need for personnel with the requisite expertise but there are queries as to whether the current training programs contain adequate competencies. Training is required in these areas to service both domestic and commercial markets and in low water demand plant selection. Training is required in water capture and filtration. Training is required in Rooftop Garden / Green Wall construction.	• Specialist competencies in the efficient design, installation, maintenance and operation of watering and irrigation systems at Certificate III to Diploma in the various specialist sectors of horticulture. • ***Development of new competencies at Certificate III to Diploma level on Rooftop Gardens and Green Walls.*** • ***Development of new competencies at Certificate III to Diploma level on Integrated Water Cycle Management.***

Amenity Horticulture

Key Change Drivers & Developments	Industry & Business Response to Changes	Skills Implications	Training Demand & Delivery Consequences
Community demand for technically qualified/certified garden and landscape professionals.	Increased expectation for complete house/landscape packages and from time-poor families engaging professionals to complete increasingly sophisticated garden and landscape features and facilities.	Skills are required at construction and maintenance activities within the industry as well as hands-on management	• Training at Certificates III and IV in the specialist sectors of horticulture including landscape and parks & gardens. • Non-apprenticeship training at Certificates IV and Diploma in Landscape Design.
Increasing regulation of the landscape industry.	Requirement that commercial landscapers acquire a Limited Domestic Builder (Structural Landscaping) qualification/ White Card.	Skills in business management, landscape work management, construction of paved hard landscape features and structures associated with legislative requirements.	• Competencies for completion of the Certificate in Structural Landscape. (Limited Domestic Builder (Structural Landscaping) qualification/ White Card)
OH&S is driving calls from within industry for greater regulation of the Arboriculture sector.	Arboriculture sector calling for greater regulation and possible licensing of sector participants.	The need for highly skilled workers that are competent in OH&S, climbing skills, tree assessment and removal, chipper operation, chainsaw operation.	• Traineeships at Certificates II, III and Diploma in Arboriculture
Recruitment and retention of skilled staff being experienced across all sectors.	Staff shortages with a lack of skilled workforce and technical horticultural professionals. Regulation of the Arboriculture sector to support staff retention.	Long term loss of skills Inadequacy of skills to enter the industry.	• Pre-apprenticeship/apprenticeship programs aimed at attracting new employees into the horticultural workforce.
Demand for technically qualified/certified sports turf professionals and reskilling of existing staff.	Further advanced education and technical skills to support career pathways identified within the Turf sector.	The continued research and development into the breeding, production and availability of new turf grass varieties, will necessitate the need for the retraining of existing staff, both in terms of understanding the biology and maintenance of these new varieties.	• ***Development of Vocational Degree with focus on research and advanced technical skills.***

Amenity Horticulture

Key Change Drivers & Developments	Industry & Business Response to Changes	Skills Implications	Training Demand & Delivery Consequences
New and emerging technologies.	Staff shortages with a lack of skilled workforce and technical horticultural professionals. Raising the public profile and perceptions of the industry and through media campaigns and positive promotion. Focused media campaign to change misinformed public attitudes that lawns equate to water wastage.	The need for highly skilled workers that are competent in the understanding and use of new and emerging technologies. This is particularly evident in relation to the installation, programming and maintenance of new irrigation systems.	• ***Competencies in the Diploma of Turf Management that address the installation, design and maintenance of water harvesting, treatment and delivery systems.***
Staff recruitment and retention impacting on availability of skilled labour.	The sportsturf industry skill set, critical labour shortages and key drivers are not affected by geographical locality (e.g. metropolitan and regional areas), but are determined more by the budgets of the various sporting clubs, golf course and councils etc.	Demand for workers with appropriate technical skills.	• Certificates III and IV in Turf Management.
Impact of Climate Change on water availability.	Water harvest, treatment and delivery system technologies.	The need for workers with a deeper understanding of water harvesting and treatment systems such as reverse osmosis technologies and filtration processes. Capacity to design and install water harvesting and treatment systems. Monitoring for water quality and levels of contaminants.	• Competencies in both the Certificate III and Diploma levels that address the installation, design and maintenance of water harvesting, treatment and delivery systems.
Likely implementation of a Carbon Pollution Reduction Scheme (CPRS) that places value on trees.	Industry's recognition that trees will be seen as valuable assets in terms of carbon sinks.	Training is required to equip the Arboriculture sector to determine vale of trees in a carbon credit economy.	• ***Development of units in carbon auditing and assessment for the arboriculture industry.*** • Training at Diploma level in Arboriculture

Amenity Horticulture

Key Change Drivers & Developments	Industry & Business Response to Changes	Skills Implications	Training Demand & Delivery Consequences
Cost of ongoing staff professional development and impact of 'Securing Jobs for Your Future'.	Evaluation of training budgets. Reduction or deferring training and reskilling of existing workforce. Industry preference for a co-sharing approach to training to meet demand.	Lack of capacity to engage existing employees in reskilling.	• Training at Certificate III in Turf Management. • Training at Certificate IV and Diploma in Turf Management.
Securing Jobs for Your Future and contestability of government training funds impacting on students with higher degrees requiring industry prescribed vocational skill sets.	Concerns that there will be a decline in graduates with sufficient technical skills to undertake employment. Industry disengaging from training and skill development due to increased cost.	Inability and reluctance to undertake further training.	• Training at Certificates III to Diploma.
Rationalisation of training delivery across many RTOs	Viability of public RTOs delivering to 'thin markets'. Loss of skilled teaching workforce as a result of program closures.	Decline in technical and teaching expertise within RTOs Specialist training programs not being offered.	• Certificate IV Training and Assessment.

Animal Care and Management

Key Change Drivers & Developments	Industry & Business Response to Changes	Skills Implications	Training Demand & Delivery Consequences
Victoria positioning itself as the biotechnology hub will see an increased demand for animal technologists. Recruiting suitable animal technology candidates with sufficient skills and training is proving frustrating.	Research institutes continue to experience difficulty in obtaining experienced staff to fill animal technologist positions within the industry. Improved opportunities for students to undertake work placement as part of training that adequately addresses the vocational and employment skills needed by the industry.	Higher level technical skills in breeding and management of laboratory animals in animal houses attached to human health research institutes. Realistic expectation of employment in the research industry – linked to effective work placement.	• Training for existing workers who have previously completed Certificate III training and are progressing to Diploma in Animal Technology. • Delivery of the Course in Advanced Breeding Techniques for Small Laboratory Animals to current laboratory animal management staff. • RTOs having to develop innovative and flexible delivery strategies that are closely allied with workplace requirements.
Specialisations within nursing are emerging with preference for off-campus training.	Emergence of vet nurses specialising in the equine sector.	Skills that focus on the range of horse types and breeds	• Certificate III in Equine Studies (Nursing) • Diploma of Veterinary Nursing (Emergency and Critical Care)
Continuing education for general practice vet nurses to advance qualifications.	AVA support for their general practice nurses to have Diploma level qualification.	High end nursing, animal behavior and pathophysiological skills along with team management and communication.	• Diploma of Veterinary Nursing (General Practice) (Victorian Accredited qualification
Consolidation of the pet industry into the large 'super store' model is a prominent trend.	The shortage of trained staff that can provide the diversity of services on offer is being felt and restricting growth. Excellent job descriptions, employment conditions and career paths needed to attract and retain staff.	A range of skills that build on the traditional animal welfare and management aspects. Retail, marketing and customer service skills	• Competencies at Certificates III and IV in Companion Animal Services • ***Importation of competencies with a focus on retail skills, marketing and customer service.***
Securing Jobs for Your Future and contestability of government training funds impacting on students with higher degrees requiring industry prescribed vocational skill sets.	The capacity to employ and train staff to meet the demand may be curtailed as industry experiences stress on training budgets. Self funding individuals unable to bare increased cost in an industry sector that does not have high wages.	Higher level skills in the management and care of exotic animal species. Captive breeding programs of endangered species and collaborative research in invertebrate and vertebrate species.	• Certificate III in Captive Animals • ***Development of specialist competencies in the supervision of captive breeding programs for exotic and endangered species.*** • ***Specialist skills/competencies in care of invertebrate species.***

Animal Care and Management			
Key Change Drivers & Developments	**Industry & Business Response to Changes**	**Skills Implications**	**Training Demand & Delivery Consequences**
The service sector and more specifically franchises are increasing in prominence.	Placement on Agrifood Skills Australia's Continuous Improvement Register. Internally non-accredited courses being conducted in-house. Informal, on-the-job learning	Trained staff with the right skill sets has been identified as crucial to business success. Skilling both the support staff and the new entrants into the sector will increase as does the popularity across the franchise area gathers momentum.	• Training at Certificates III and IV to address the needs for dog trainers, pet groomers.

Conservation and Land Management

Key Change Drivers & Developments	Industry & Business Response to Changes	Skills Implications	Training Demand & Delivery Consequences
Expansion in area of terrestrial and marine management assets by Parks Victoria.	Development of community centred management strategies Employment of additional staff.	Construction and maintenance of parks facilities, bushfire and emergency response, pest plant and animal programs, administration tasks.	• Competencies at Certificates III, IV and Diploma in CLM
The Victorian Bushfire Royal Commission has drawn attention to the need for more skilled fire fighters.	DSE has developed its Fire Training Management System drawing upon competencies from the Public Safety Training Package. Increase in skilled staff within Parks Victoria and DSE.	Requirement for skills specific to bushland fire fighting, conservation and preservation concepts, 4WD operations, managing teams, incident control strategies, media liaison, prescribed burn operations.	• ***Inclusion of control burn related competencies in the revised National CLM Training Package.*** • ***Inclusion of incident control competencies*** • ***Competencies in Sustainable Fire Management principles.*** • ***Competencies in Incident Control Strategies and Managing Crews***
The impact of Climate Change as evidenced by rising temperatures, increased CO_2 levels is responsible for extreme weather events and fire intensity and frequency.	The demand for more trained and skilled staff within Parks Victoria and DSE is a direct response to increased fire risk across the state. Vegetation Assessors	Fire abatement and control and management in a range of government controlled parks and forest situations. Vegetation assessment, introduction of CPRS and carbon tax will require skilled vegetation assessors	• Competencies at Certificates III, IV and Diploma in CLM to include competencies in fire management • Competencies from Certificate IV Public Safety • ***Development of additional national competencies in bushland fire fighting.*** • ***Development of new national competencies in Vegetation Assessment.***
Release of the Murray Darling Basin Authority's guide outlines the reduction in the availability of water for agricultural purposes.	Reduced volumes of water not only for production, but also for the environment. Increased demand for monitoring river health and the environment.	Management of water for natural area conservation well as floodplain and related area management which fall under the purview of CMAs across the state.	• Diploma of Sustainable Water and Catchment Management • ***Inclusion of water related competencies in the revised National CLM Training Package.***
Securing Jobs for Your Future and contestability of government training funds impacting on students with higher degrees requiring industry prescribed vocational skill sets.	The capacity to employ and train staff to meet the demand may be curtailed as industry experiences stress on training budgets.	Increase in area managed by government agencies and the heightened fire risks associated with climate change requires an increase in staff with appropriate skills.	• Competencies at Certificates III, IV and Diploma in CLM

Conservation and Land Management			
Key Change Drivers & Developments	**Industry & Business Response to Changes**	**Skills Implications**	**Training Demand & Delivery Consequences**
Indigenous employment programs designed to engage traditional owners in the management.	Parks Victoria's commitment to employ 7% indigenous staff. Greater engagement of the Aboriginal communities in the conservation and land management sector with emphasis on cultural and traditional values.	Construction and maintenance of parks facilities, bushfire and emergency response, pest plant and animal programs, administration tasks.	• Competencies at Certificates III, IV and Diploma in CLM with units developed on Aboriginal culture and heritage.

Seafood and Aquaculture

Key Change Drivers & Developments	Industry & Business Response to Changes	Skills Implications	Training Demand & Delivery Consequences
Disease outbreaks in the abalone sector in both ocean stock and land based farms have had major impacts on sector viability.	Closure of abalone wild catch zones has seen the reduction of skilled workers remaining in the industry.	Skills in biosecurity and fish health management.	• Competencies at Certificates III to IV and Diploma in Seafood Industry (biosecurity and fish health management).
Climate Change and likely long term impacts.	Changing what fish can be grown or caught and where they are found. Increased likelihood of disease and pest problems and incursions. Viability of businesses may need to be reviewed under current species practices.	Fish health management training will become important for aquaculture in the face of increased pest and disease problems. Long term impacts of Climate Change.	• Competencies at Certificates III to IV and Diploma in Seafood Industry (biosecurity and fish health management).
Legislative requirements to comply with the *Seafood Safety Act 2003* requires that all seafood processors are to have a Food Safety Plan in place.	Prime Safe inspections of registered businesses.	Skills in food safety and OH&S issues.	• Competencies for new and existing workers at Certificate II to Diploma in Food Safety and OH&S.
Ageing workforce and low educational attainment.	The establishment of industry recognised career pathways for aquaculture.	Full qualifications for new trainees. Skills recognition and skills gap training for existing workers.	• Training for new and existing workers at Certificate II to Diploma in Aquaculture.
Expansion of marine aquaculture production and the provision of new water for aquaculture operations.	Potential development of commercial scale hatchery and diversification into other marine species with commercial potential.	Requirements for specialised hatchery expertise. Requirement to find new markets for products. Increase in the skills required for fish health management.	• Training at Certificates III to Diploma in Seafood (Aquaculture) with particular focus on abalone and mussel production. • ***Training specifically in sampling, disease detection and monitoring stock.*** • Value adding concepts. • Developing international markets.
Recovery of the mining sector is expected to see a shortage in deckhands.	Seeking unskilled labour through job networks with limited success.	Pre-employment and existing worker training in deckhand operations and OH&S.	• Certificate I in Seafood Industry (Fishing operations) – selected units only.

Seafood and Aquaculture

Key Change Drivers & Developments	Industry & Business Response to Changes	Skills Implications	Training Demand & Delivery Consequences
The development of a draft Aboriginal Fishing Strategy by DPI Fisheries with a target set to increase Aboriginal employment in Fisheries Victoria to 5%.	Greater engagement of the Aboriginal communities in the seafood and aquaculture sectors and a focus on developing 'cultural competence' across the industry.	Communication strategies and awareness of appropriate language when talking with different people in the Aboriginal community. Involvement of Traditional Owners in the research and monitoring of fisheries resources.	• Competencies at Certificates II, III, IV and Diploma in Seafood Industry o Fisheries management o Policy development o Research o Aboriginal cultural heritage and awareness.

APPENDIX 4 – OCCUPATIONS IN DEMAND

Definition: An occupation is in demand when employers are unable to fill or have considerable difficulty filling vacancies for the occupation, or significant specialised skill needs within that occupation over an extended time period, at market rates of remuneration and standard conditions of employment, and in reasonably accessible locations.

Occupations in demand		
ANZSCO code	**ANZSCO occupation**	**Industry Descriptor**
3622-12	Arborist	Arborist / Tree Surgeon
1212-21	Vegetable Grower	Production Horticulture
8412-14	Vegetable Farm Worker	Production Horticulture
3624-11	Nurseryperson	Retail Nursery Production Nursery (Supervisor)
3622-11	Gardener (General)	Parks and Gardens Worker (Horticulturist)
3623-11	Greenkeeper	Turf (Curator)
N/L		Animal Technician
N/L		Animal Control Officer
1212-14	Grain, Oilseed or Pasture Grower	Grain Farmer
7211-11	Agricultural and Horticultural Mobile Plant Operator	Agriculture Machinery Operators
1213-18	Pig Farmer	Pig Farmer
8415-12	Dairy Cattle Farm Worker	Dairy Farmer
8415-13	Mixed Livestock Farm Worker	Mixed Farmer
8415-15	Sheep Farmer Worker	Sheep Farmer
1211-11	Aquaculture Farmer	Aquaculture Farmer
8411-11	Aquaculture Worker	Aquaculture Worker
2341-11	Agricultural Consultant	Agronomist
2422-11	Vocational Education Teachers	Trade Teacher/VET Teacher
5995-14	Biosecurity Officer	Biosecurity Officer
N/L		Bushland Firefighter

APPENDIX 5 - OCCUPATIONS EXPERIENCING CRITICAL SKILL SHORTAGES

1. Long lead time: Occupations that require skills which are highly specialised and require extended learning and preparation time over several years.

2. High use: Where there is a high incidence of those undertaking formal training for a qualification subsequently taking up employment in the corresponding occupation.

3. High risk: Occupations where the disruption caused by the skills being in short supply imposes a significant risk to the Australian economy and/or community.

4. High information: Where the quality of information about the occupation is adequate to the task of assessing future demand and evaluating the first three criteria.

Occupations experiencing critical skill shortages
Animal Technician (1)
Arborist (1)
Agricultural Consultant (1)