



Submission to: New Zealand Productivity Commission
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On: Inquiry into New Models of Tertiary Education

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Executive Summary

Horticulture NZ (HortNZ) welcomes the Productivity Commission's Inquiry and looks forward to supporting the Commission to find ways to create a more innovative tertiary education and training system to better cater for industry need.

For horticulture to maintain its global competitive edge, reach its ambitious goals and contribute to New Zealand's local communities and regional economies, this sector requires a talented, skilled and innovative workforce. The industry is in high growth and is set in a dynamic and challenging business environment. The businesses are diverse, sophisticated and market-driven with an increasing trend towards vertical integration and corporatisation.

To meet growth targets the Ministry for Primary Industries has predicted in its 2014 "People Powered" Report that horticulture will need 14,900 more workers with qualifications and that the industry will need to train 26,300 to replace the natural attrition of workers within the industry by 2025.

However, the levels of formal training, education and qualifications for horticulture are relatively low. This signals a disconnect between the industry and the tertiary education system. Our experience is

one of a system that suffers from significant inertia and that struggles to engage and match the pace required by today's and tomorrow's horticulture businesses.

To achieve the level of engagement required for horticulture we seek a more dynamic and accessible tertiary system that:

1. is more agile and flexible to match dynamic business need,
2. is more end-user driven and less qualifications driven,
3. provides consolidated strategic leadership, assessment of skill and capability and research that minimises the silos and fosters leadership by industry and industry good organisations, and
4. promotes strong partnerships that create real scale and minimises competition and duplication. We do not want to see ITO, Polytechnic and University competition and duplication.

HortNZ and Affiliates would urge the Commission to consider investigating new model concepts that:

1. **encourage more flexible, innovative and agile learning solutions that lead to world class graduate and postgraduate qualifications**
 - bite-sized chunks of learning: short courses, bite-size credentialing, modules,
 - accelerated use of on-line learning to complement face to face programmes,
 - recognition and incentivisation of non-formal learning,
 - however, such new innovations should complement the valuable quality longer term qualifications and programmes ie quality degrees and streamlined L1-6 certificate and diplomas.
2. **connect better with real world need. We promote:**
 - a fresh look at how qualifications are structured and can better contextualise learning such as embedded real business projects, modularisation, incentives for internships , review of the value of generic qualifications versus sector specific qualifications
 - an education system that is less driven by qualifications and more by end user needs of today's and tomorrow's businesses such as starting with roles and working backwards
 - Government and TEOs to create more opportunities for industry input such as TROQ needs analysis and the Pipfruit NZ Critical Skills Project
 - facilitation of stronger and more ongoing interaction with industry good organisations.
3. **consolidate strategic leadership:**
 - integrate the silos and make it straight forward for industry to play a leading role
 - Government investment into solid market research regarding demand.
 - measuring and monitoring of outcomes
 - Government funded research to illustrate the return on investment for training in the context of specific sectors.
4. **encourage more collaboration and seamlessness**
 - create or adapt funding regimes to have more flexibility to minimise competition and duplication and incentivise new, nimble and creative niche companies to enter the market

- foster simple partnership through to combined institutional delivery such as between, universities with CRIs, university with businesses, universities between themselves , polytechnics and ITOs
- identify and facilitate seamless education opportunities such as The Proposal for a Network of Horticulture Provision 2012.

In essence we seek a service and accountable approach to the end user from the tertiary system. A fast, leading-edge, global business needs a fast leading-edge tertiary system to match; more simplicity and more agility.

Introduction

Thank you for the opportunity to participate in the inquiry into new models to improve New Zealand's tertiary education and training system.

This paper is being submitted by Horticulture New Zealand (HortNZ) in consultation with our affiliates. HortNZ is the national grower representative body for NZ's 5,500 commercial fruit and vegetable businesses. Horticulture covers a diverse range of sectors (from kiwifruit and pipfruit to asparagus and tomatoes and regional grower associations such as in Pukekohe and Hawkes Bay).

We offer a high level end-user's perspective of a global and dynamic industry that is an integral part of local communities and regional economies across New Zealand and which is in significant growth mode.

The focus of this submission is on employer and student demand. We provide insight into the world of horticulture now and into the future, outline key aspects of the industry relevant to a skilled workforce and therefore tertiary education models. We identify the key issues and challenges that we see with the current system to date and reflect on our experience, through the eyes of industry and employers and some of our recent graduates from the system. Finally we explore how we see the tertiary system needs to change to meet those demands.

For horticulture enterprises, productivity is top of mind. This is the primary reason companies invest in training and education. Underpinning education and training, is the need to lift company and individual performance. Creating a better culture to grow and motivate their staff materially affects the bottom line. Tertiary education and training has an important part to play in this and if we are going to achieve industry aspirations and targets we need a tertiary education system that fosters high performance and innovation in our industry.

HortNZ supports the movement towards a more innovative tertiary education and training system. The call for a system that enhances more buy-in and involvement by employers, and better motivates students has been longstanding and continues.

1. Horticulture as an End User of the Tertiary System

Horticulture is a global and dynamic industry that is an integral part of local communities and regional economies across New Zealand. Current total sales are \$5 billion per annum and it plans to reach \$10 billion by 2020. It is a growing industry, with ambitious goals and under constant change. A dynamic, skilled workforce is fundamental to reaching its growth targets and sustaining its international reputation for innovation and quality. *For more detail see Horticulture's Story Annex 1-5.*

Consolidation is dramatic in several sectors with the industry becoming increasingly corporatised and vertically integrated. However the industry still retains a large number of grower-owners in small to medium enterprises. Such diversity of employment structure combined with complex biological systems, advanced management techniques, wide product range, leading edge technology and postharvest facilities, world-class logistics and sophisticated marketing means that individual fruit and vegetable businesses must draw on a complex and complementary array of disciplines, skills and knowledge (both technical and business). *See Horticulture's Story Annex 6-7.*

Despite this, current levels of formal training, education and qualifications within the industry are low compared to the rest of New Zealand. A study commissioned by HortNZ and undertaken by BERL in 2010 showed that the fruit and vegetable sectors had only 49% trained to Level 2 and above compared to the national average of 66.6%. More recently MPI has predicted in its 2014 "People Powered" Report that horticulture will need 14,900 more workers with qualifications and that the industry will need to train 26,300 to replace the natural attrition of workers in order to reach its growth targets. The low level of formal training and education for such a significant and high growth industry signals a disconnect between the industry and the tertiary education system. *See Horticulture's Story Annex 8.*

2. Key Issues and Change Required

2.1 Horticulture needs a more agile and flexible tertiary system to match dynamic business need

Horticulture operates within a lively business environment which is market driven. This, coupled with a dynamic growing environment means the industry needs to lead or quickly respond to market and other external situations. To remain viable and prosper, businesses must be sharp and flexible. Therefore, provision of training also needs to be sharp, flexible and adapt quickly to changing business needs and external influences.

However, we have experienced considerable inertia in the tertiary system which does not match the rapidly evolving cut and thrust of businesses within a sector like horticulture. (*see Horticulture's Story Annex 9*). Horticulture has identified significant gaps in skills development and it is our view that a major part of the issue is that the system is not geared up to respond well. The tertiary system is highly bureaucratic, complex and difficult to navigate both at policy and at delivery level.

At a policy level:

- Anything going through the system takes "too long". The effort and time to make changes is a "put off". For example, the Targeted Review of Qualification (TROQ) process motivated the industry because it focused on need and role, however, the considerable time taken to register new qualifications has resulted in industry disengagement with the process. Industry expects the tertiary sector to be able to be more responsive. There is always the risk that by the time the education sector has responded the industry has moved on.

- There are multiple, large and autonomous government agencies TEC, MBIE, MOE, NZQA that are monolithic by nature. These can be difficult for industry good organisations to access and find their way around. There is no one-stop shop to “go to” or interact with. In addition, there are multiple Tertiary Education Organisations (TEOs) that are funded from different pools. The sum total of this creates confusion and significant barriers to engagement by industry and busy commercial businesses. Even well-resourced industry groups struggle to be able to engage effectively.
- Funding regimes seem complex, multi-faceted and inflexible.

At delivery level:

- The high focus on 1-4 year qualifications does not cater enough for the rapid pace of business. Long term qualifications are essential and valuable but in today’s business environment employers and employees are simply not able to take too much time out for long chunks of education and training. As well as traditional longer term qualifications we need the system to foster more short courses and modularisation.
- Flexibility in the delivery options for training is increasingly sought, i.e. webinars and online tutorials which can be accessed and “picked up and put down” as workload and weather allows.
- Qualifications frames are still regarded by industry as having a one size fits all approach. We suggest that there needs to be a fresh look at how qualifications are set up for industries like horticulture. For example an interesting qualification model, that no longer is in place was the Lincoln horticulture ‘sandwich’ degree where in their third year students spent a significant part of the year working in a business as part of their qualification, then went back into the education system to complete their academic component. This could be a model worthy of reinventing. Greater incentives for internships is another.
- A conversation with a recent Bachelor of Agri Science graduate who is now working as an operations manager for a kiwifruit packhouse illustrates the benefit of embedding more practical components into academic qualifications. *“My degree as a whole essentially provided a solid foundation and broad perspective but the most useful aspect for my specific role was the paper that provided me with decision-making tools and in my Honours year it was the 3-4 projects that were more practical and real”*. This was backed up by a parallel conversation with his manager who had recognised that while he had a steep learning curve to be role ready, he hit the ground running with respect to solving problems and being able to join the dots quickly.
- More contextualised learning should be recognised. While the statistics for the industry show a low level of formal training, this is not to say there is no development. The industry has a high component of non-formal learning ‘on the shop floor’ as an integrated part of everyday business. This is a legitimate and valuable aspect of skills development. The concept of Record of Prior learning has captured this to a limited extent but we would suggest that the Inquiry should investigate this type of seamlessness be better incorporated and acknowledged into the tertiary models.
- Technology within the tertiary education system is not keeping up and needs to be more innovative, Paper-based systems are still prevalent. A manager who has trainees in a large vegetable growing corporate shares his frustration. *“Where are the on-line training modules? We are asking our cadets to learn from an archaic paper based system. This is a generation brought up with computers and dealing with GPS system with touchscreen computers when they drive*

their tractors. When the sun shines we make hay and when it rains we do other things like training. So our guys need huge flexibility around time. Paper alone is not nailing it. Online could provide so much more". A system that better enables and utilises e-learning would suit our industry. Online learning options including smart phone apps need to be more available and become more mainstream. Electronic delivery would also cater for the wide geographic spread of our sector.

- However, this should not be to the detriment of the benefits of face to face learning which also suits practical industries like horticulture. The same manager said *"during my day I have 100 distractions and I need someone to kick start me so I kick start my employees. The current ITO's regional advisor has been brilliant at that but it does depend on the person. Nothing can beat the face to face"*.
- As well as long term qualifications we would like to see a system that encourages provides more opportunity for smaller, nimble and niche providers to contribute and deliver training.
- Finally jargon proves to be a significant barrier.

2.2 Horticulture needs tertiary models that are more end-user driven and less qualifications driven

We applaud the Tertiary Education Strategy and priorities with respect to greater engagement with industry as outlined on p.20 of the Issues paper. HortNZ agrees that there is a need for stronger links between tertiary providers and employers:

- more explicit co-operation between industry and TEOs,
- encouraging TEOs to create opportunities for industry involvement in planning & delivering education,
- stated that industry needs to clearly identify its medium and long term talent needs.

However, the system needs to change so that the intent of this strategy can be translated into reality. This is one of the system's greatest asks. Traditionally formal education and training has focused on the building of qualifications and regimes to develop those qualifications as opposed to what businesses need.

The recent Targeted Review of Qualifications (TROQ) which focused on starting from job roles and working backwards and with significant involvement by industry was a milestone. More mechanisms like this need to be put in place across the board and at all levels and facets of tertiary education. The traditional approach of a system driven by qualification development as opposed to end-user need has not worked well for an industry like horticulture. We seek a system that creates a fundamental shift in what drives our educators and trainers, i.e. which has a much higher focus on demand and the desired outcomes required by employers and employees.

A critical element moving forward is a much higher emphasis on solid market research to inform decisions around the skill sets and knowledge to be offered within education and training programmes that are rolled out across horticulture. There are pockets of direct end-user approach with mechanisms set up to obtain interaction with industry and employers. Three examples include:

- 1 Primary ITO Industry Partnership Groups and Stakeholder Council
- 2 The Horticulture Targeted Review of Qualifications (TROQ) needs analysis and building of qualifications starting with work roles and working backwards.
- 3 Pipfruit NZ Critical Skills Needs Analysis

We believe not enough is occurring across the board. We would strongly encourage the Commission to explore efficient mechanisms to identify and understand the 'real' people capability needs of today's

businesses and its employees, i.e. market research. The Pipfruit NZ Critical Skills Needs Analysis is a project that we see as having high potential to have wider industry application.

We are looking for a framework that ensures education and training is driven from business and end-user need as opposed to an inward looking system focused on qualifications and building up institutions and numbers. The question needs to be constantly asked “to what end?”

2.3 Strategic leadership, research and assessment of skill and capability needs to be consolidated

Currently leadership and assessment of skill and capability is spread across several entities, and is somewhat siloed. Who should lead here? Is it industry or is it the ITO? Is it the providers themselves? Or is it Government? Currently we have the situation that is a bit of all of these.

- Separate providers can be limited to their customer base and region.
- The ITO and industry, together has established substantive mechanisms to engage with industry but the scope is limited to L1—6 and their own trainees. And the work done there is not necessarily taking into account training by polytechnics and private training providers nor educating post L6. This means there is a significant gap for overall information metrics and data collection and therefore strategic leadership and approach. With respect to strategic leadership the multiple functions of the ITO as facilitator, moderator, assessor and provision of training can create, at minimum, perceived conflict of interest.
- There are numerous skills needs and forecasting projects being instigated by different Government Agencies: MBIE, MOE, NZQA ITOs and industry. This is becoming too fragmented.
- HortNZ and our affiliates believe industry good organisations should take a leading role. We acknowledge that the ability for industry to take a strategic approach, drive or participate in workforce and education needs analyses is challenging. Some sectors have more capacity and capability to do this than others. Even for those who do have dedicated resource the task is overwhelming and cost prohibitive.

We believe this is a major issue and seek a much more integrated approach. HortNZ recommends that the Commission investigate options to achieve consolidated strategic leadership. It is vital that this include mechanisms to foster leading and partnership roles by industry and industry good organisations with Government. We acknowledge that the ability of even the well-resourced industries to take a strategic approach, drive or even participate, but a way must be found.

This needs to include the market or end-user research as outlined in the previous section

We also support the instigation of measurement and monitoring to support a more outcomes focused regime.

It would also be useful to undertake research on the return on investment in training to the bottom line. Not only would this help build a regime of accountability but also would motivate uptake of training by employers because they would be able to relate the training to the value to their business. In the horticulture industry there are a significant number of growers who do not see the benefit of staff development and will not support employee up-skilling, or who are simply not aware of what is

available. The availability and benefits of education, training and professional development needs to be able to be better communicated from a more robust evidence- based approach.

2.4 Horticulture seeks a system that promotes strong partnerships that create real scale and minimises competition and duplication

We seek a system that promotes strong partnerships and collaboration.

The ongoing issue of competition and duplications still exists. Industry needs to develop more capability delivered faster and does not have the time nor inclination to deal with the complexity, competition and duplication of the current tertiary system. Again, the recent review of qualifications has been a major step towards minimising duplication at qualification level, but we are concerned that there is a danger of a new plethora of programmes to be developed and that we shall end up with the same duplication and complexity as we have had.

Funding regimes where tertiary providers compete on unlevelled playing fields, that encourages competition and duplication is not good. New Zealand is too small for too many players and too many programmes. This duplication means that expertise gets diluted, and employers and employees cannot see the wood for the trees. This has been a fundamental issue and we would welcome investigation into funding models that minimise this.

The concept of seamless education is attractive to a sector like horticulture: seamless between levels and seamless between institutions. There was a promising TEC-funded initiative developed by Richard Stevens, formerly of Lincoln University: A proposal for a Network of Horticulture Provision which fostered stepping diploma programmes into a degree and partnering between Lincoln University and several polytechnics. To HortNZ's disappointment this failed to achieve any traction in the current system despite industry support. We question why this occurred?

Education and training should be encompassing the latest research both from the university and CRIs. We would like to see a lot more collaboration between the universities and CRIs and strong links between the leading practitioners and universities such as more use of guest lecturers etc. For example we support the Lincoln hub concept.

The Partnership for Excellence initiative between Massey and Lincoln Universities has resulted in the positive result of a joint venture company Agri-One which offers professional development and joint research. The original aim was to look towards combined courses across the core curriculum but this was found to be too difficult within the parameters of the tertiary system. So we still have two universities running separate undergraduate and postgraduate courses directly related to the primary sector, with separate teaching and research capabilities. We would like to see the "Centre of Excellence "concept expand to core delivery.

At more of a micro level our industry is in need of graduates yet both universities struggle to capture horticulture students. This year HortNZ and Massey University have agreed to work closer together to attract people into the industry and set an informal target to double the number of graduates from Massey going into horticulture businesses in three years. A more formal MOU is planned to be drawn up later in the year.

We would urge the Commission to explore how changes to the system could facilitate faster and more effective results through the full spectrum of collaboration ie from simple partnerships to full merger.

Conclusion

There are aspects of the current system that are discouraging engagement by industry and enterprise and significantly hindering industry growth. For the tertiary system to step into a new mode of helping New Zealand industries like horticulture prosper we require less bureaucratic, more innovative and accessible models that enables proactive industry engagement and uptake of training and education. Industry needs a more simple approach that is easy to understand and work with. We seek more models that align educational outcomes much closer to business productivity, performance and innovation.

HortNZ has offered a number of model concepts for the Commission to consider in the Inquiry. We look towards faster more agile delivery models that utilise new technology and offer chunked down learning that balances the valuable longer term qualifications and programmes. We identify the need for more flexible, simpler and faster funding arrangements that foster nimble, innovative delivery. We promote strong partnerships that create real scale and seamlessness. We identify the need for mechanisms for consolidated leadership, assessment of skills and capability and market-driven research. Models that will identify, understand, and cater for the 'real' people capability needs of enterprise. And we want to see a system that enables better collaboration by those who deliver in order to reduce competition and duplication between providers. Finally we seek efficient ways to have more leadership by industry and industry good organisations.

The paper, as it stands, focuses at a high level, but how this plays out needs to be considered. It's not just about systems but also the approach to delivery, quality and industry alignment

Thank you for the opportunity and your consideration. We look forward to working with the Commission in the future through this Inquiry.

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This section sets the scene. It provides a broad overview of horticulture to provide insight into the key aspects of the industry relevant to a skilled workforce and therefore tertiary education and training models

1. *A significant industry with a significant workforce.* Horticulture is a \$ 5 billion/annum in sales (see Fig 1) with total investment in horticulture exceeding \$36.5 billion with exports to 124 countries. There are around 5,500 businesses who employ approximately 36,000 permanent New Zealanders. Another 50,000 find seasonal work in this industry.

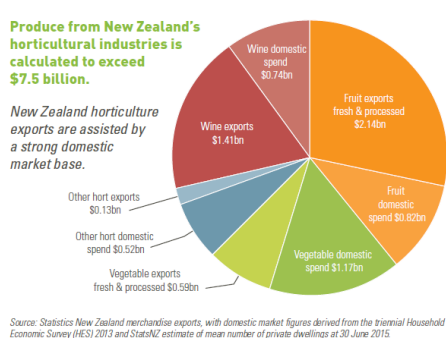


Fig 1

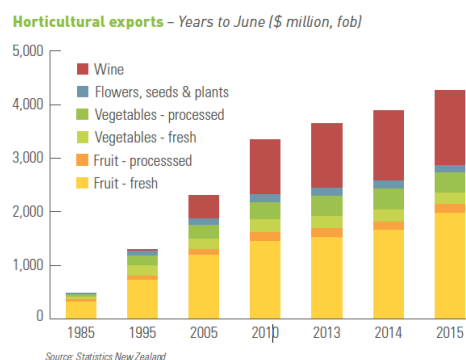


Fig 2

As indicated in Fig 2 exports have increased, thirty five-fold from \$115 m/year in 1980 to an estimated \$3,969 billion in 2015. The Ministry for Primary Industry's (MPI) *Situation and Outlook 2015* forecast is \$4, 681 b exports by 2019 with growth expected across all sectors during this period. This is despite the fact that horticulture is a cyclic industry subject to the fickleness of the market, the weather, challenges such as PSA in kiwifruit and psyllid in potatoes and capsicums and that we work with perishable product. If the industry is to meet growth targets the MPI has forecast the permanent workforce is expected to reach 44,145 by 2025. A talented workforce is fundamental to horticulture's business performance and its ability to sustain growth.

2. *A global leader and with an international reputation for innovation and quality:* Our global reach and international reputation is high. Exporting perishable product to distant but premium markets means a focus on advanced management practices, high quality standards and sophisticated storage systems. We lead in plant variety rights and IP (intellectual property) and we do not just export produce. Compac Sorting Equipment exports to over 24 countries around the globe. NZ is well known for its product innovations for example links to Functional foods - antioxidants in black currents, carotenoids /bioflavinds in carrots as well as the fresh products in supermarkets. We combine all this with creative marketing such as the Zespri brand and provenance stories. A talented workforce is fundamental to sustaining horticulture's international competitive edge.
3. *High use of technology along the supply chain:* We have state of the art leading edge technology such as fully automated, computerised packing systems, controlled atmosphere storage and track and trace systems. Technology is and will be a key driver for change. Being "connected" is changing the face of horticulture and in parallel has the ability to change the face of education and training for horticulture. Individual use of computers, mobiles and apps are becoming more and more mainstream. A talented workforce in a high technology environment requires high tech mechanism

to gain skills and knowledge. This will be an important aspect to consider in new models of education.

4.. Ambitious goals: The Industry has set itself a vision of \$10 billion by 2020 and individual sectors & businesses have set ambitious growth targets Kiwifruit = \$3b by 2025 , pipfruit = \$1b by 2022 , Potatoes NZ double the value of fresh and processed NZ based export by 2025. NZ Avocados quadruple sales and triple productivity by 2023. The industry, as a whole has four high level strategic outcomes:

1. Setting the standard for sustainably produced products
2. Building global competitiveness
3. Dominating product categories within target markets
4. Creating value commercialise products and control our Intellectual Property

The horticulture industry strategy underpinning this strongly encourages growers to achieve to scale, by finding better ways to work together, rather than apart as individuals. A skilled workforce, at all levels, has been identified as a key “enabler” in order to achieve these outcomes. The Horticulture NZ strategy explicitly states that “people are its greatest asset” and a highly skilled and productive workforce is essential to achieving the strategy’s objectives.

5. Integral to local communities across wide number of regions of NZ: Horticulture’s reach stretches from the kumara growers of Northland to the multimillion dollar kiwifruit corporates in the Bay of Plenty to the cherry orchards of Central Otago. In these areas and other key growing regions like Pukekohe, Hawkes Bay, Gisborne, Taranaki, Horowhenua, Nelson, and Canterbury our members are strong contributors to regional economies and social fabric. The extent of spread is illustrated in Fig 3. Horticulture is rural yet very close to urban areas. Horticulture and its workforce is a high contributor to both rural and city communities’ and their wellbeing.

Regional resources

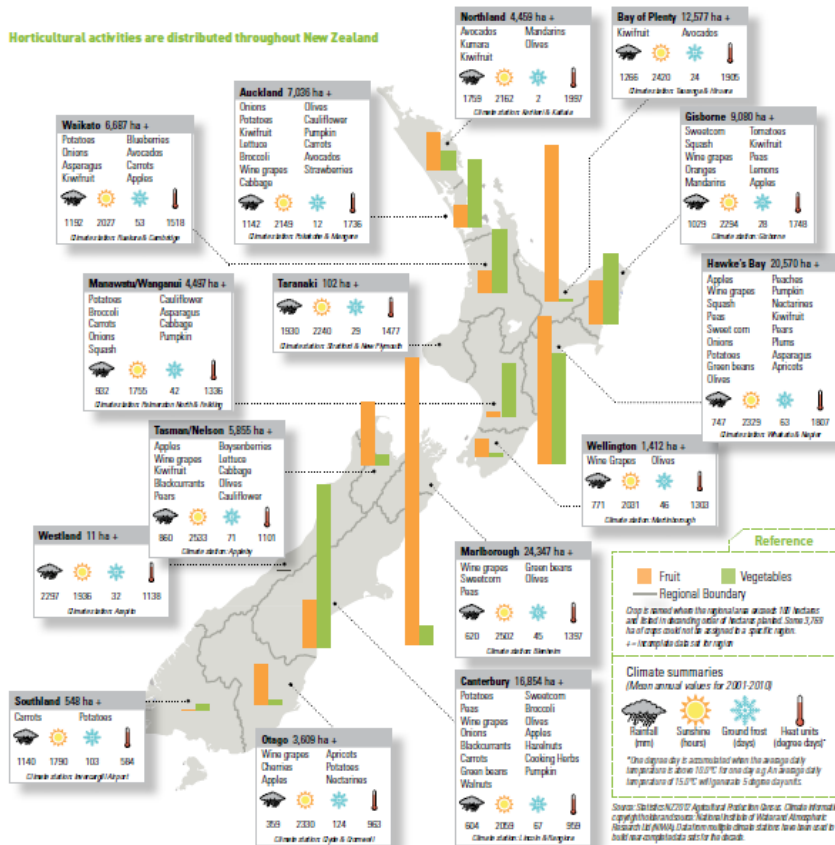


Fig 3

6. Increasing consolidation and vertical integration: Historically horticulture operations have been based around family owned and operated units. However, today's businesses are becoming more complex and increasingly vertically integrated. And the trend to increased consolidation and corporate rather than family-based structures is expected to continue. These larger entities combine growing, harvesting, packing, processing, storage, sales and marketing so the range of skills required in one organisation can be highly diverse, challenging and rewarding.

Consolidation is dramatic in several sectors. For example, since 2000 there has been a 35% reduction in pipfruit growers and a 50% decrease in the number of vegetable growers. At the same time, production has continued to grow increase as has the number of hectares in production. Orchard and farms, packhouses and cool stores are increasingly an integrated part of the same business. There are still at the same time, however, a high number of smaller family owned - operations and niche growers such as cherry growers.

This means there are a wide range of horticulture employment structures. At one end there are the traditional family-owned businesses where the owner is responsible for both management and production functions. At the other extreme there are large multimillion dollar corporates, and a few very large businesses in kiwifruit, pipfruit, onions/potatoes/squash with capitalisations of in excess of \$50 million plus. These all have all the associated tiers of management and support structures expected of corporates of this size. They often comprise of a number of business units and there is an increased need for specialist staff to cover all aspects of their operation. These corporates have their own human resource managers and systems. Corporates disciplines demand high levels of professionalism. Another main type of employer are contractors. These generally have a small core of permanent staff and a high component of seasonal labour.

7. Horticulture is complex and multi-disciplined where a sophisticated array of knowledge and skills is required: As a consequence of consolidation and vertical integration within horticultural enterprises workforce needs are changing at many levels. The horticulture industry is complex & sophisticated and we need a diverse range of skills and competencies: technical, business, hard and soft, specialist and generic is required.

We still have high seasonal requirements and the need for practical production skills. But fruit and vegetable production businesses consist of complex biological systems that require increasingly more sophisticated technical and business skills. Topics on plant biology, plant propagation, tissue culture, crop production, protected cropping, post-harvest physiology, plant breeding, and crop nutrition and plant protection, soil science risk management, marketing, strategic planning, consumer behaviour, personnel management, leadership and governance. Courses need to cover areas such as innovation, research, added value product development, transport and logistics, post-harvest, processed products, marketing and sales, pathways to market research and development, technology improvement and manufacturing new product technology, IT systems, and export markets.

While agriculture and horticulture draw from range of complementary disciplines, it is the application and context of those disciplines that will provide us with the leading edge.

In 2011 HortNZ carried out an informal study (low key discussions with employers. Common themes were that technical production skills development needed to be either maintained or increased and that there were gaps around people and business management, pustosanitary requirements, postharvest and market driven skills and knowledge , ie both technical and soft skills were lacking. This is still pertinent today.

In the more recent and more detailed Pipfruit NZ critical skills study themes coming through are: Health and Safety, Food safety, production systems, plant protection systems, people management and teamwork, market access and international regulatory environments, continuous improvement systems, system design and verification, sustainability, automation and technology, biosecurity, track and traceability, logistics, finance.

There are multi-career paths and broad human resource needs. A multidiscipline approach is essential. The industry is growing and enterprises are undergoing accelerated rate of change with significant and rapidly changing workforce development needs at many levels. The demand for formal education and training needs to be recognised.

8. However, despite its size, high workforce needs and growth the horticulture industry engagement with formal training and education is low: Important to this inquiry is that current levels of formal training, education and qualifications within the industry are low compared to the rest of NZ. A study commissioned by HortNZ and undertaken by BERL in 2010 showed that the fruit and vegetable sectors had only 49 % trained Level 2 and above compared to the NZ national average of 66.6 %. More recently MPI has predicted in its 2014 “People Powered” Report that to reach its growth targets for 2025 horticulture will need 14,900 more workers with qualifications and that the industry will need to train 26,300 people to replace the natural attrition of workers within the industry.

This is backed up by anecdotal evidence from horticulture businesses who are constantly looking for people to fill vacancies. For example HortNZ will often field calls from horticulture businesses looking university graduates that could be considered for agronomist and pack house manager positions. A recent graduate of Massey University was offered four positions and indicated that her colleagues were also in a similar situation. The number of graduates at all levels from industry trainees to postgraduates is not enough to cater for need.

The low level of formal training and education for such a significant and high growth industry signals a disconnect between the industry and the tertiary education system. There is simply not enough engagement between tertiary system and the horticulture sector. The call for a system that enhances more buy-in and involvement by and better motivates students has been longstanding but the issues still exist. Several aspects of the current system often disrupts industry connection and limits the benefits of training.

Horticulture has an aging workforce. Like other primary sectors within NZ and globally we have difficulty in attracting and recruiting young people into the industry or related training and education. Succession has been identified as an increasing challenge.

9. Dynamic business and growing environment: External Pressures on horticulture business are highly impactful. Horticulture is in the business producing high quality food, processing/packing, and exporting product to customers who require higher and higher specifications alongside an increasingly tougher global and national/ local regulatory environment within NZ. More discerning customers now take into account food safety, employment ethics and the environmental impacts behind their fruit and vegetables. Programmes such as Growsafe, NZ Gap or Health and Safety, traditionally considered compliance issues are now seen market led core business drivers. There is also increasing competition globally, with consolidation of supermarkets and consumer preferences driving change. NZ competes

with many countries that are highly subsidised and have lower production (especially labour) costs. The impact of the global financial crisis and the exchange rate changing overnight can be significant

In addition horticulture enterprises work with perishable product and are open to biological and climatic events that have the potential to destroy annual harvest or whole year incomes in a short space of time.

This dynamic business environment which is market driven coupled with a dynamic growing environment means the industry needs to quickly respond to market and other external situations. To remain viable and prosper businesses need to be sharp and flexible. Thus the provision of training also needs to be flexible and be able adapt quickly in response with the changing business needs and external influences. Agility is essential.

10. Highly diverse: The horticulture industry is diverse with 22 different product groups and over 100 different crops across fruit, berries, vegetables, fresh and processed. One size cannot fit all.

11 Workforce is significant to horticulture: Typically more than 50% of a horticulture enterprise costs surround labour. These costs can be very high. It is important that business investment in the workforce is leveraged by the appropriate skill levels and a tertiary system that can deliver these.

12. Seasonal nature: Access to well-trained seasonal labour is essential to the survival of the industry. The Recognised Seasonal Employer (RSE) schemes and people involved in the scheme form an important part of the seasonal workforce and are increasingly becoming well trained and skilled. The strategic issue at crown and industry level with this scheme is both the balance and tension with our policy of *Employing New Zealanders first*. Before RSE the industry has had to have a very high focus on supply of seasonal labour to the detriment of development of the permanent workforce. However with the success of RSE in the industry employers and company HR managers can now focus more on upskilling their permanent staff rather than trying to make sure they have enough people to pick or pack their fruit and vegetables. HortNZ recognises that the RSE is an important contributor to NZ's aid to the Pacific Islands.