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**NATIONAL APPLES & PEARS AND  
HAWKE'S BAY HORTICULTURE  
INDUSTRY TRANSFORMATION PLAN**

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**FINAL**

**August 2021**

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## Acknowledgments

This report has been prepared for New Zealand Apples & Pears Inc. (NZAPI) and Horticulture New Zealand (Horticulture NZ).

The work has been supported by a leading group of Hawke's Bay growers and RSE employers (Bostock NZ, FreshCo, Freshmax, Johnny Appleseed – The Yummy Fruit Company, Mr Apple, Taylorcorp, and Thornhill Ltd), who collectively represent 60% of the NZ export and domestic apple market and contribute over \$1b in export earnings to the New Zealand economy via a range a horticultural products.

NZAPI and Horticulture NZ, along with this grower group, will be sharing this Industry Transformation Plan with other Hawke's Bay growers and growers in other regions.

NZAPI, Horticulture NZ and the grower group would like to thank the five Hawke's Bay Councils and key government departments for the support provided in developing this important work. The industry looks forward to partnering with Local and Central Government on implementing the work programme and commitments that make up this plan.

[AFTER CONSULTATION - ADD LOGOS OF SUPPORTING ORGANISATIONS AND COMPANIES AND COUNCILS IN TASMAN & CENTRAL OTAGO]



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## 1.0 FORWARD

We are very pleased to present the National Apples & Pears and Hawke’s Bay Horticulture Industry Transformation Plan (ITP) 2021–2030.

This plan has been created with the intent that it be a ‘living’ framework and partnership that is adapted as needed over time. It has also been created with the intent that it be customised for use at the individual company level through specific workplace development plans. (i.e. individual companies will have their own starting programmes with areas of priority. Progress will be tracked at both the business and industry level). This also allows for adoption and adaption by other horticulture sectors and other New Zealand regions. It also seeks to align with other national horticulture strategies that have been developed or are in development.

The next step is for government and industry to formalise support for a long-term industry-led, government-enabled partnership that has the scale, resources, and durability to successfully support this critically important ITP. This includes agreeing on the best model for ensuring delivery of the ITP i.e. the dedicated resources and people both industry and government will make available to allocate actions, ensure delivery within identified timeframes, and report against identified targets.

The Plan uses New Zealand apples and pears sector data (for New Zealand and Hawke’s Bay) as the basis for the analysis that underpins key labour market findings and forecasts. This data could be extended or replaced with more relevant sectoral and regional data as needed.

The horticulture sector underpins a number of New Zealand’s regions and provides valuable full-time and seasonal roles for New Zealanders. The sector is critical in supporting the region’s recovery from COVID-19 and, as export-focussed sectors, in providing the productive and competitive base to grow the (regional and national) economy in a way that ensures it is not only dependent on domestic demand and government support and in a way that meets our collective export, Māori economic development, and land-use (sustainability and climate change) objectives.

The industry is already working hard to attract, train and retain a skilled and productive workforce. This Industry Transformation Plan provides a strong framework that brings those initiatives together. It builds on the considerable work already underway; it also looks to the future and identifies key areas and actions that will require collaborative effort and partnership to support a transition of the horticulture workforce to higher skill levels and less reliance on seasonal migrant labour over the long-term.

We thank everyone who has contributed to the development of the National Apples & Pears and Hawke’s Bay Horticulture Industry Transformation Plan 2021–2030. We look forward to working together to attract and build the talent we need to support a successful sector and the important contribution it makes to the New Zealand economy.



Alan Pollard  
CE, NZ Apples & Pears Inc.

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## **2.0 EXECUTIVE SUMMARY**

### **2.1 Building better together: Enabling growth while solving labour market challenges**

New Zealand, Hawke’s Bay and other horticultural regions have developed a clear comparative advantage in the horticultural products that we export. This has involved the development of world-leading intellectual property in plant varieties and the systems that support market access and ensure the highest quality product reaches international customers.

Our global leading position is also supported by an increasingly sophisticated eco-system of suppliers along the value and supply chain (which is reflected in NZ’s agritech potential and the industry being at the “global frontier” of international fruit production.).

We don’t need to look for this economic ‘unicorn’; it is hiding in plain sight.

The opportunity presenting for NZ is to enable this growth in a way that leverages the considerable capabilities and advantages we have built over successive decades, in a way that responds to, and resolves over time, the labour market challenges the sector is facing.

The national Apples & Pears sector is already moving toward a more highly-skilled and permanent workforce with a smaller proportion of seasonal roles. This is heavily supported by the ongoing global commercialisation of NZ-owned intellectual property and know-how and technological development and adoption. But changing the composition of an industry’s workforce takes times. This is a multi-decadal process which can only be supported and sustained by supportive balance sheets and regulatory settings.

The Government has a critical role to play in supporting and accelerating this transition and the national Apples & Pears and Hawke’s Bay horticulture sectors would like to partner and collaborate with government on this important mahi and journey for NZ.

The opportunity is not just to build better but to build the best, together.

### **2.2 The Industry Transformation Plan (ITP)**

This National Apples & Pears and Hawke’s Bay Industry Transformation Plan (ITP) has been developed to support the sector and a long-term partnership between industry and government.

It responds to an invitation from the Government to develop a “comprehensive, national and sector-wide workforce transition plan”. The Government has said it will work closely with industries that can demonstrate a comprehensive sector-wide plan to attract and keep NZ workers, with specific actions to address barriers around pay, conditions, and career progression.

This ITP identifies the critical initiatives and actions that are required to meet shared industry and government workforce objectives. These are:

- Increase the proportion of the horticulture sector’s New Zealand workforce, including increasing the number of longer-term sustainable roles for New Zealand workers;
- Increase the provision of training to upskill New Zealand workers for horticulture work; and
- Increase employer’s ability to adopt workforce related innovation and best practice.

The ITP specially demonstrates and highlights:

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- How the national Apples & Pears and Hawke’s Bay horticulture sectors are meeting the challenge of attracting and retaining New Zealanders; improving pay and conditions for New Zealand and RSE workers; training and growing the talent the sector requires to thrive; and investing in new technology to increase productivity and profitability, and meet critical labour market challenges.
- That the horticulture sector has already begun a transition process and that it will need time and support for the transition to automation to develop the technology and redesign orchards and packhouses.
- That there is an opportunity to create a long-term partnership between industry and government that has the scale, resources and durability to successfully support:
  - Continued development of industry-led and government enabled workforce programmes focused on attraction, retention and training of New Zealanders;
  - A focused innovation policy and programme that identifies the priority areas for collaboration and complementary investment that helps to accelerate horticulture-related technological development and adoption;
  - An RSE programme which, in the short to medium-term, provides certainty that sufficient and experienced seasonal labour will be available to complete all seasonal tasks in full, on time, and in specification; and
  - Economic development opportunities for participating Pacific Island Countries.

## **2.2. An enduring industry-led and government-enabled partnership**

This ITP highlights the breadth of industry-led activity focused on workforce attraction, retention, training and investment in new technology.

Many of the areas that are showing most promise have been government-enabled through funding and there has been a very positive evolution of the working level relationship between industry and government over the last 5 or so years. This evolution has shifted the focus from government leading programmes to the industry leading programmes with support from government funding.

The industry would like to build on this strong foundation and proposes a long-term industry-led, government-enabled partnership be formalised to underpin, guide and implement this ITP. The partnership would draw from the strengths and appropriate roles of the partners and will require shared design and governance and appropriate resourcing and durability to be successful.

This partnership would include Iwi/hapū as mana whenua and Treaty Partners but also increasingly significant horticultural investors and Local Government who has key roles as a local regulator and the ability to bring stakeholders together from across a range of interests to collaborate on shared regional challenges and opportunities.

## **2.3 Areas of focus, commitments and recommendations**

A successful transition from where we are now to where we want to be in 2030 will require a long-term partnership between industry and government that is focused on four key elements:

1. Attraction and retention of NZers (which will remain an ongoing industry-led priority);

2. Training of NZers (which will require a fit-for-purpose system that is currently being built);
3. Access to RSE and other seasonal migrant workers (who will be needed, in significant volumes, for some time for peak season activities); and
4. Innovation and investment to support the transition to business and growing models that rely on less manual, and more higher-skilled, labour.

Efforts to continue to improve working conditions and pay are important and a focus of industry and grower efforts. It is not, however, only pay and other conditions (e.g. transport, flexible hours, meals, and sometimes accommodation etc.) that is preventing uptake of available roles. The significant mobilisation of industry and government resources to attract NZers to available roles over the last 12 months has provided a strong evidence base for this.

These efforts need to be supported by: acknowledgment of the critical role seasonal migrant workers play in meeting peak season labour demand; certainty that the industry will continue to have access to pre-COVID levels of highly skilled RSE workers in the short to medium-term; and a partnership between industry and government on a longer-term programme of work focused on supporting the transition to business and growing models that rely on less manual, and more higher skilled, labour.

In the short to medium-term the certainty of sufficient and experienced seasonal labour being available for harvest and pruning is critical for investment confidence and the ability to continue to grow opportunities for NZ and its horticulture regions.

The commitment and recommendations in this ITP are structured around four key areas of focus which relate to the critical issues and opportunities presenting for the sector:

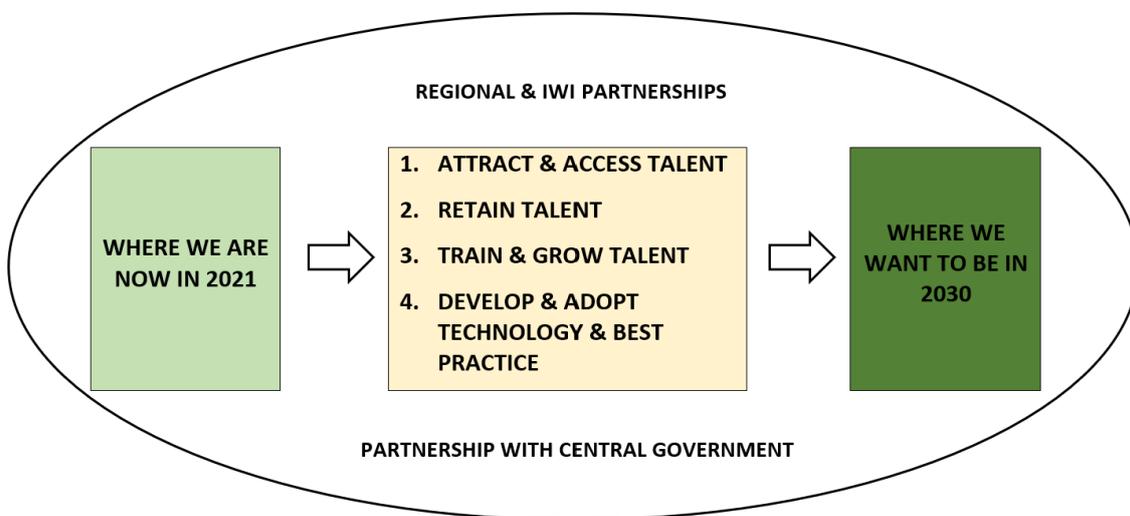
- Attracting and retaining talent;
- Training and growing talent;
- Accessing sufficient seasonal labour; and
- Developing and adopting technology and best practice.

Table 1 below captures the key commitments or themes and recommendations that are set out in the detailed ITP Action Plan in Section 10.

**Table 1: Key commitments, themes and recommendations in ITP Action Plan**

Areas of focus	Key commitments and recommendations
<b>Attracting and retaining talent</b>	<ul style="list-style-type: none"> <li>• Invest and grow as an industry globally</li> <li>• Support new industry investments</li> <li>• Work with Māori businesses to support their horticultural aspirations</li> <li>• Develop and run industry attraction programmes across regions</li> <li>• Engage school leavers and job seekers with the compelling plant industry career story</li> <li>• Evolve work environments to fit technology advances</li> <li>• Employ 1250 more workers in permanent roles</li> <li>• Continue to develop individual employer Workforce Development Plans with all employers.</li> <li>• Continue to partner with government agencies to implement employment programmes supporting New Zealand workers</li> <li>• Identify and mitigate barriers to workforce participation</li> <li>• Establish mechanisms to ensure all non-apprentice permanent employees are paid \$22.10.</li> <li>• Ensure pay rates for workers reflect skills and productivity and attract available and willing NZers to seasonal and permanent roles</li> <li>• Research and plan for future workforce needs</li> </ul>
<b>Training and growing talent</b>	<ul style="list-style-type: none"> <li>• Actively partner with government within the new vocational education and tertiary environment to deliver the right skills and education for frontier firms</li> <li>• Develop with stakeholders a nimble skill development programme that responds to the emerging needs of industry</li> <li>• Implement programmes to develop people from all skill levels and backgrounds</li> </ul>
<b>Accessing sufficient seasonal labour</b>	<ul style="list-style-type: none"> <li>• Partner with government agencies to implement employment programmes supporting New Zealand workers</li> <li>• Support the review of RSE programme and a higher level of performance and transparency</li> <li>• Support the wellbeing of the RSE community, including capability and resilience to the impacts of COVID-19.</li> <li>• Support vaccination roll outs of RSE workers in NZ and the Pacific</li> <li>• Develop with Government, processes allowing RSE workers from COVID-free countries who have had the COVID-19 vaccine to travel to NZ without quarantine</li> <li>• Ensure RSE accommodation does not compete with urban housing</li> <li>• Ensure workers are shared across regions and employers so that seasonal tasks are completed in time</li> <li>• Strengthen exploitation prevention assurance systems</li> </ul>
<b>Developing and adopting technology and best practice</b>	<ul style="list-style-type: none"> <li>• In partnership with key stakeholders host technology summits and missions to identify and support global and local technology development and accelerate adoption</li> <li>• Co-invest in transitional projects that support this ITP</li> <li>• As part of global I.P. deployment, host technology missions to explore global solutions</li> </ul>

### 3.0 NATIONAL APPLES & PEARS AND HAWKE'S BAY INDUSTRY TRANSFORMATION PLAN (ITP)



#### 3.1 Purpose and objectives

We need a clear understanding of current and future horticulture workforce needs to underpin decisions and actions across industry and government. We also need a shared industry and government view of what a successful horticulture industry looks like (and that this shared vision is worth pursuing). This is important as a clear and shared vision will help sustain the long term commitment that is needed to partner and collaborate to address critical labour market issues and effectively leverage the considerable opportunities presenting for the sector and region.

This ITP aims to support the sector by identifying the areas and actions:

- The industry will prioritise and undertake to grow opportunities for the national Apples & Pears and Hawke's Bay horticulture sectors;
- Where industry and government can work together to leverage the horticulture opportunities for regions, and help resolve, over time, critical labour market issues and vulnerabilities.

The ITP captures how the national Apples & Pears and Hawke's Bay horticulture sector will shift its workforce from its current state, which has a significant reliance on seasonal migrant labour, to a future state in which New Zealanders in higher-value, permanent jobs make up the majority of the sector workforce and there is less reliance on seasonal migrant labour.

The overall workforce objectives of the ITP are to:

- Increase the proportion of the horticulture sector's New Zealand workforce, including increasing the number of longer-term sustainable roles for New Zealand workers.
- Increase the provision of training to upskill New Zealand workers for horticulture work.
- Increase employer's ability to adopt workforce related innovation and best practice.

### 3.2 Approach and methodology

This paper, and the analysis which underpins it, is structured around four areas:

1. **Critical background on the sector**, the economic opportunity and the labour market challenges it is facing. This provides the rationale for focusing on a set of core issues. This includes a short review of the attraction and retention activities undertaken by industry and government over the last 12 months, the impact these have had and the lessons they hold for the National Apples & Pears and Hawke's Bay Horticulture Workforce Transition Plan;
2. **Identification of 'current state'**, which captures what the national apples and pears sector looks like now across a range of dimensions (production; exports; labour market; investment in, and use of, technology; and resource use), and the activities that are being pursued to support the attraction, retention and development of a skilled and successful horticulture workforce.
3. **Identification of what a successful 'future state'** which captures what the national apples and pears sector could look like across a range of dimensions (production; exports; labour market; investment in, and use of, technology; and resource use). This is built both on forecasts of what is possible and on the shared industry and government vision of what a successful national apples and pears sector could look like.
4. **The National Apples & Pears and Hawke's Bay Horticulture Industry Transformation Plan** which uses the current and future state analysis and focuses on what would be required to support a successful transition from where we are now to where we would like to be (e.g. attraction, training and retention of NZers; access to RSE workers for peak season activities; estimates of investments in technology and the impact on the demand for, and training of, labour), and the roles the industry and government will need to play to support the different elements of a successful transition.

### 3.3 Vision

As noted above it is important for industry and government to have a shared view of what a successful national apples and pears and Hawke's Bay horticulture industry looks like if it is going to successfully collaborate to address critical labour market issues and effectively leverage the considerable opportunities presenting for the sector and region.

The agreed high-level vision below captures a number of critical success measures that capture the important role horticulture plays (and will increasingly play) in supporting higher levels of wellbeing for New Zealand.

Industry and government want to see the horticulture sector:

- Thriving and internationally competitive
- Adding value to New Zealand's exports and areas of comparative advantage
- Supporting well-paying and increasingly highly-skilled and mostly permanent jobs for New Zealanders
- Supporting the growth of knowledge-intensive agri-tech and suppliers along the supply chain
- Playing a key role in helping to achieve New Zealand's sustainability and climate change objectives.

### ***High-level vision for National Apples & Pears and Hawke's Bay Horticulture sector***

*The national apples & pears and Hawke's Bay horticulture sector maintains its world-leading position; producing premium products (both fresh and processed) for export and national markets; is supporting well-paying and increasingly highly skilled and mostly permanent jobs for New Zealanders (acknowledging that some less skilled labour will always be needed, in particular to support harvesting and processing during peak seasons); is supporting the growth of a sophisticated eco-system of suppliers of knowledge and technology; and is playing a key role in helping to achieve New Zealand's sustainability and climate change objectives.*

## **3.4 Summary of Industry Transformation Plan focus areas, objectives and high-level actions**

The Industry Transformation Plan has four key areas of focus:

- Attracting and retaining talent;
- Training and growing talent;
- Accessing sufficient seasonal labour; and
- Developing and adopting technology and best practice.

These areas of focus have been formed around the critical issues and opportunities presenting for the sector (see Section 5 below).

This section provides a summary of the purpose, what success looks like in 2030, the objectives of the work and the high-level areas of action for each of the four areas of actions. Section 10 contains the detailed Action Plan and the rest of the paper contains the background and analysis to support the focus on these areas and the detailed work captured in this Plan.

### **3.4.1 Attract & Retain Talent**

The table below summarises the critical aspects of the work related to Attract & Retain Talent that is set out in the detailed Action Plan in Section 10 below. These are:

- The purpose of work to be undertaken in partnership with government;
- What success looks like in 2030;
- Objectives of the work; and
- High-level areas of action.

**Table 2: Summary of Attract & Retain Talent**

<b>Purpose</b>
<b>To assist employers attract and retain the talent they need to meet industry objectives</b>
<b>What success looks like</b>
<ul style="list-style-type: none"> <li>• The horticulture sector is seen as an attractive career choice for a diverse range of NZers as it is offering a variety of interesting and fulfilling roles and pathways involving effective and inclusive support, training and remuneration</li> <li>• The sector’s workforce is diverse and it models inclusivity in the way it supports its people</li> <li>• The horticulture sector is retaining the talent it attracts as it is offering a variety of interesting and fulfilling roles and career pathways involving competitive remuneration, training, and effective support for issues constraining engagement with employment opportunities e.g. accommodation, transport, hours of work etc.</li> <li>• The sector is playing a leadership role in eliminating exploitation from its supply-chains</li> </ul>
<b>Objectives</b>
<ul style="list-style-type: none"> <li>• Attract a greater number of NZers to roles in the horticulture sector</li> <li>• Improve the understanding and perception of work and careers in the horticulture sector</li> <li>• Create and support clear pathways to higher skill and pay levels for skilled and less skilled positions within the horticulture sector</li> <li>• Improve pay rates and conditions for horticulture workers in a sustainable way</li> <li>• Provide access to year round opportunities</li> <li>• Provide solutions for employment constraints – which may include access to appropriate accommodation; access to transport; and flexible working conditions</li> <li>• Ensure the sector has independent standardised systems, competencies, and verification of supply-chain employment practices</li> </ul>
<b>Actions are focused on:</b>
1. Work to improve the understanding and perception of work and careers in the horticulture sector.
2. Promotion of career opportunities and training and support available in the horticulture sector.
3. Partnerships with government agencies (e.g. MSD, Corrections and MPI) to offer opportunities for job seekers, the youth, solo parents, people with specific health disability needs and those serving community sentence.
4. Improving pay in a sustainable way.
5. Providing effective solutions for employment constraints – which may include access to appropriate accommodation; access to transport; and flexible working conditions.
6. Providing visible pathways and effective staircasing to higher value roles.
7. Partnerships with government agencies to support workers with effective pastoral care.
8. Identification and effective resolution of any worker exploitation.

### 3.4.2 Train & Grow Talent

The table below summarises the critical aspects of the work related to Train & Grow Talent that is set out in the detailed Action Plan in Section 10 below. These are:

- The purpose of work to be undertaken in partnership with government;
- What success looks like in 2030;
- Objectives of the work; and
- High-level areas of action.

**Table 3: Summary of Train & Grow Talent**

<b>Purpose</b>
<b>To increase the provision of, and access to, relevant and fit-for-purpose training that prepares New Zealanders for fulfilling roles in the horticulture sector</b>
<b>What success looks like</b>
<ul style="list-style-type: none"> <li>• Training matches the needs of employers and employees and the system encourages and supports job seekers to gain skills and training in areas where there are opportunities.</li> <li>• Prospective and current members of the horticultural workforce are able to access training solutions that are the best fit for them. This includes on the job work integrated with in-person and online training at all levels and available in some form to all regions.</li> <li>• Lateral career changers are welcomed into the industry through bespoke pathways including taster courses, internships and graduate programmes.</li> <li>• Distributed leadership is found throughout the horticulture industry so that new programs, innovations and best practice are readily adopted throughout the workforce.</li> </ul>
<b>Objectives</b>
<ul style="list-style-type: none"> <li>• To ensure there are suitably skilled workers to undertake the permanent roles available as the industry grows.</li> <li>• Develop a work force with the right skills by developing industry integrated learning programs at Primary, Intermediate and Secondary Schools feeding into high quality vocational and university qualifications.</li> <li>• Vocational and University-level horticultural offerings are fit for purpose for both the student and industry. They are attractive and reputable programs that are work-integrated as required.</li> <li>• Develop new horticulture qualifications that meet the developing needs of industry (e.g. based on the dynamic technological environment within which it operates).</li> <li>• To ensure immigration settings work to support attraction of skilled migrants needed to support technology adoption, automation and plant genetics where these skills are not be developed quickly enough in NZ.</li> </ul>
<b>Actions are focused on:</b>
1. Investing and partnering with Universities to develop appropriate qualifications.
2. Actively working on the RoVE initiatives to provide a strong understanding of industry needs.
3. Partnering with education providers and the RoVE structures to develop fit-for-purpose training programmes.
4. Promoting the value of training to employers.
5. Increasing the level of pastoral care to students to support effective and sustained learning.
6. Working with government on skilled migrant attraction in areas needed to support technology adoption, automation and plant genetics.

### 3.4.3 Accessing Sufficient Seasonal Labour

The table below summarises the critical aspects of the work related to Accessing Sufficient Seasonal Labour that is set out in the detailed Action Plan in Section 10 below. These are:

- The purpose of work to be undertaken in partnership with government;
- What success looks like in 2030;
- Objectives of the work; and
- High-level areas of action.

**Table 4: Summary of Accessing Sufficient Seasonal Labour**

<b>Purpose</b>
<b>To provide confidence for the industry to continue to invest and grow in a way that supports the creation of more permanent and higher-skilled roles as a proportion of the workforce</b>
<b>What success looks like</b>
<ul style="list-style-type: none"> <li>• The sector has certainty that it will be able to meet peak seasonal labour demands and this supports increasing investment in new varieties, growing systems and technology which help improve productivity and labour market issues</li> </ul>
<b>Objectives</b>
<ul style="list-style-type: none"> <li>• Remove uncertainty around whether there will be a sufficient and planned supply of seasonal workers to undertake peak seasonal tasks</li> <li>• Support investment in a growing industry and the global frontier</li> </ul>
<b>Actions are focused on:</b>
1. Providing certainty for horticulture businesses that they will be able to meet peak seasonal labour demands by supporting the RSE scheme and meeting the forecast number of seasonal workers required.
2. Supporting the COVID-19 vaccination roll-out both in NZ and in the Pacific.
3. Allowing RSE workers from COVID-free countries who have had the COVID-19 vaccine to travel to NZ without quarantine.
4. Ensuring RSE accommodation does not compete with urban housing.
5. Ensuring RSE workers are shared across regions and employers so that seasonal tasks are completed on time.
6. Strengthening exploitation prevention assurance systems.

### 3.4.4 Develop and adopt technology and best practice

The table below summarises the critical aspects of the work related to Develop and Adopt Technology and Best Practice that is set out in the detailed Action Plan in Section 10 below. These are:

- The purpose of work to be undertaken in partnership with government;
- What success looks like in 2030;
- Objectives of the work; and
- High-level areas of action.

**Table 5: Summary of Develop & Adopt Technology and Best Practice**

<b>Purpose</b>
<b>To increase employers' ability to adopt workforce-related innovation and best practice</b>
<b>What success looks like</b>
<ul style="list-style-type: none"> <li>• The horticulture sector has partnered with government to accelerate the development and adoption of world-leading technology and best practice that has: <ul style="list-style-type: none"> <li>○ Increased productivity in the horticulture sector</li> <li>○ Helped increase the overall skill levels of the horticulture workforce</li> <li>○ Reduced the need for migrant and less-skilled labour for seasonal roles; and</li> <li>○ Led to a growing hort-tech export industry.</li> </ul> </li> </ul>
<b>Objectives</b>
<ul style="list-style-type: none"> <li>• To create an enduring, sustainable partnership between industry and government that supports focused effort and collaboration to develop and deliver technology solutions and support growers and packers to adopt technology and best practice</li> <li>• Increase employers' ability to adopt workforce innovations and best practice</li> <li>• To support a growing agile, skills and knowledge-based industry that employs a high proportion of qualified New Zealanders in meaningful permanent roles</li> <li>• To provide demand for new technical solutions to achieve the industry's workforce objectives, which in turn supports the Government's Agritech Transformation Plan</li> </ul>
<b>Actions are focused on:</b>
1. Creating and resourcing a focused innovation programme to help accelerate horticulture-related technological development and adoption.
2. Creating a range of platforms, networks and programmes to share industry challenges and needs in relation to technology; share information on horticulture-related technological developments; and connect the industry to international experts and knowledge.
3. Work with Māori to develop new production systems and cultivars and explore opportunities related to indigenous branding (that connects Māori cultural values and high-quality, sustainability-produced horticultural products).
4. Work to support employers' ability to adopt workforce innovations and best practice.
5. Innovative leadership programmes to enable collaboration and knowledge transfer.

## 4.0 BACKGROUND AND CONTEXT

### 4.1 The horticulture sector in Hawke's Bay (and other horticulture regions)

The horticulture sector underpins the Hawke's Bay economy and is a major contributor to other regional economies. The sector also plays an important role in delivering transformational benefits to communities in the Pacific Island countries that participate in the Recognised Seasonal Employer (RSE) scheme<sup>1</sup>.

The horticulture sector provides valuable full time and seasonal roles for New Zealanders and is critical in supporting the recovery from COVID-19 in a number of NZ regions. As an export-focussed sector it is also critical in providing the productive and competitive base to grow the economy in a way that ensures it is not only dependent on domestic demand and government support and in a way that meets our collective export, and land-use (sustainability and climate change) objectives.

The national Apples and Pear and Hawke's Bay horticulture and sectors are focused on doing more to employ New Zealanders (NZers). This involves a range of short-term activities and an existing longer-term Workforce Development Strategy that is responding to the challenges that have been set by government.

A key objective of the industry is expanding full time work for NZers. The industry is also focussed on helping NZers move from welfare to permanent work. Full time work is critical in supporting shared (industry and government) social, community and economic development outcomes as it more effectively provides the training and personal development, financial security, self-esteem and contribution to society aspects of work.

While expanding permanent work for NZers is a focus for the industry there will still be a need for seasonal work and seasonal workers. The nature of this work will change over time as investment in new technologies and growing systems allow a broader range of people to do what is currently physically demanding work. But this a longer term process as the technology develops and balance sheets and confidence allow large capital investments to be made. The RSE scheme has, in the meantime, allowed the industry to grow and create a larger number of permanent roles (supporting better social outcomes) for NZers. RSE workers are essentially a permanent seasonal workforce given they can spend around 13 weeks in one region (e.g. the apple harvest in Hawke's Bay) before moving on to complete another critical task in another region (e.g. winter grape pruning in Marlborough) before returning home. The national CAP of 14,400 RSE workers provides no more than 7200 Full Time Equivalents (FTEs) as workers average 6 months in NZ. Additionally when workers complete a 13 week task, which is a quarter of the year, with an employer they are only 0.25 of an FTE.

Annex 12 captures the flow of seasonal work in horticulture by month. RSE employers have developed strong ongoing relationships with specific RSE workers, and their village communities, and have

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<sup>1</sup> The RSE Scheme has been described by the International Labour Organisation (ILO) and The World Bank as a 'best practice' managed circular migration scheme. The ILO good practices database states "The comprehensive approach of the RSE scheme towards filling labour shortages in the horticulture and viticulture industries in New Zealand and the system of checks to ensure that the migration process is orderly, fair, and circular could service as a model for other destination countries." The United Nations have also put it forward as a model for other countries to follow. The Pacific Island nations that participate have found the scheme hugely beneficial having delivered transformational changes to the communities involved..

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developed effective workforce sharing arrangements across regions. This has supported training efforts of RSE workers and each year these skill investments increase the productivity of the worker and the business.

Having an adequate workforce of skilled workers mean all the complex tasks required to maximise productivity and quality are able to be carried out at the right time. NZ's ability to produce higher quality fruit has underpinned the price premium NZ produce commands in export markets.

Horticulture growers and processors are also focused on worker welfare issues. Breaches of worker welfare are rare but taken very seriously by the industry. Industry uses commercial assurance systems which use customer expectations to drive employers towards best practice. Global retailers demand an independently audited social practice certificate for all growers before they will stock any products.

Over the last few years the industry has implemented a tool called GRASP (Global G.A.P. Risk Assessment for Social Practice), across its growers. This is an international standard developed through a partnership between global retailers and producers. Premium global retailers demand certification to this assurance platform from producers. All kiwifruit, apples, and other export crops such as onions and potatoes, have adopted the GRASP certification standard. Independent auditors audit producers and provide them with a score which is visible to the retailer buyers. The score takes in to account compliance with standards in areas such as worker representation, complaints procedures, employment agreements and wage rates. Without a sufficiently high score the producers are unable to sell their produce. This is working; employers are highly incentivised to look after their workers.

The NZ horticulture sector is highly engaged in working with other like-minded global supply-chain partners on combating exploitation of workers. New Zealand Apples and Pears Incorporated (NZAPI) has taken international committee positions on the GLOBALG.A.P. Risk Assessment Social Practice (GRASP) stakeholder committee and the overall GLOBALG.A.P. Board. This has put NZAPI in the unique position to be co-designing solutions, combating exploitation, with key global retail chains.

An example of this evolution is the development and compulsory deployment of a new GRASP social practice standard specifically targeted at contractors. All GLOBALG.A.P. producers will only be allowed to use fully audited GRASP certified contractors once released.

In Hawke's Bay NZAPI engages Ngāti Kahungunu and their 'Tihei Mauri Ora' platform to provide Manaakitanga and pastoral care for guest workers. This initiative is being used to investigate similar Iwi-based support systems for other growing regions in NZ.

## **4.2 Constraints to overcome to support industry aspirations**

In 2015 an apples and pears industry survey was run to capture: the critical skills required by the production and post-harvest sectors in the next five to ten years; industry training preferences and future needs; and a standardised list of industry roles and role descriptions.

The first component of the 2015 work - a survey to describe critical skills required by production and post-harvest sectors - was revisited in 2020 to revalidate the data after five years. In addition, it sought to aid in the strategic positioning of industry capability needs to meet a new target of \$2 billion in exports by 2030.

The final question of the survey was “What are the biggest challenges for the NZ apple and pear industry to maintain global competitiveness and sustained stability over the next decade?”. Employing and retaining quality staff, as well as accessing sufficient seasonal labour continue to be perceived as the biggest challenges for the next decade, closely followed by market access and biosecurity. These critical challenges have been consistent across the 2015 and 2020 surveys.

The industry recognises and acknowledges it will struggle to realise its growth potential unless it addresses constraints within New Zealand. These include:

- **Strong demand driving growth and the challenges of the “future workplace” will require more people with new skills to meet the needs of a work environment immersed in technological change.** The new education environment must provide current and future workers with softer skills including design thinking, problem solving, collaboration, cognition, and cultural connection.
- The industry also needs to **protect its reputation as the world leading producer of safe, healthy, and sustainably grown fresh fruit.** Customers and consumers need be confident in the authenticity, quality, and sustainability, of its products.
- The industry **must keep ahead of the competition and remain the global innovator** be it the development of sustainable production systems, novel cultivars, assurance systems, and it must partner with Māori as their population grows, their businesses flourish, and as the apple and pear industry grows sustainably.
- **Current and future changes in land use from pasture and cropping to apples and pears will require more skilled permanent and seasonal workers.**
- The competition for **housing to accommodate seasonal workers** is putting unsustainable pressure on the market. Planned purpose-built accommodation is the answer and industry has invested enormously but it needs to have certainty that they will get workers to house to do more in this area.
- **Industry must lead in the development of systems and competencies that can combat exploitation.** Seasonal labour markets are at higher risk of exploitation both in New Zealand and globally. New Zealand’s premium export industries have significant shared reputational risk when it comes to exploitation of workers.

#### 4.2.1 Training

The current training system is not fit for purpose. There is an urgent need to support teachers in integrating horticulture into the appropriate level curriculum and incentivising able students to see horticulture as a future career.

The workforce of the future will require more people with new skills to support technological change. The new education environment must be able to provide current and future workers with softer skills including design thinking, problem solving, collaboration, cognition, and cultural connection.

The recent increase in profitability and innovation in the apple and pear sector has created a surge in need for middle management, senior supervisory staff and skills in automation and technology. In a

post-COVID environment there is an opportunity to attract skilled people that can be transitioned to the sector to utilize skills they already possess.

Efforts to better align the skills training system to industry needs have been underway for some time. A Targeted Review of Qualifications (TROQ) process was completed in 2014 which brought industry and educational leaders together to map out the drivers for industry skill development. The outcome of the TROQ process showed the horticulture industry needed a transformational shift in the delivery of skills and education in the sector. The industry turned to the Polytech model but they were not capable of delivering the new skills in the new production qualifications, especially at the higher levels and the completely new area of post-harvest.

In the apple and pear example, the industry is at the global frontier of technology in the form of world leading Genetech – new cultivars from its breeding programme for apples, pears and Asian European inter specific pears, and world leading Plantech – complex, research driven production systems. It is no surprise, therefore that it has a shortage of workers with specific skills. These skills are clearly different from many of the old traditional production-driven skills, it is more expensive to deliver training in them, and the re-skilling cycle is much shorter.

Workplace training cannot deliver the new skills proficiently so this requires more off-job classwork. However, the ITO funding is not high enough to provide the amount of quality off job training necessary. ITP's do not have tutors with these new training skills and the market they must go to in order to find people with the right training skills is the same one where the industry is competing in.

The training tutor skills shortage is further exacerbated by the requirement for Polytechs's not to train across regions. The Polytech's, therefore, have to replicate faculties in each of their regions to provide horticultural training nationally. This situation results in the industry, Polytechs's and ITO's not being aligned on training programme content and delivery, and therefore not signing them off for delivery. Polytech's and ITO's then try and deliver what their faculty has capability to do. In many cases, they are unable to deliver the leading edge skills needed for a "frontier industry", and place resources in other "easier" industries.

The challenge the industry is facing is a systemic failure in the ITO / Polytech training provision models and not the industry's lack of desire to train its workers. This means effective implementation of the Review of Vocational Education (RoVE), and a successful Food and Fibre Centre for Vocational Excellence (CoVE) in Hawke's Bay are high priorities for the industry. The industry is, accordingly, investing considerable effort and resources into this work.

### **4.3 Regional Skills Leadership Group (RSLG)**

Recent work between industry, government and the education and training sector via the new Regional Skills Leadership Groups (RSLG)<sup>2</sup> has built on the apples and pears sector work and identified the top opportunities and challenges facing the Hawke's Bay horticulture sector.

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<sup>2</sup> Regional Skills Leadership Groups were formed in June 2020 to identify and support better ways of meeting future skills and workforce needs in NZ regions and cities. They are an attempt by government to better align labour market planning so that NZ's workforce, education and immigration systems are effectively working together to meet the differing skills needs across the country.

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### 4.3.1 Top opportunities

The RSLG process has identified the top opportunities for the Hawke's Bay horticulture and apples and pears sectors as:

1. **Ownership of intellectual property rights for the global commercialisation of fruit cultivars.** The New Zealand apple and pear industry is global. The new cultivar breeding programme for apples and pears is owned by industry and is called Prevar. The Prevar conveyor of ultra-premium new cultivars provides the New Zealand apple industry a unique opportunity. Currently the New Zealand owned I.P. cultivars produce around 200,000MT outside of New Zealand. There are around 1250 growers who grow this volume in countries that include: France, Spain, UK, Germany, Italy, US, Canada, China, South Korea, and Japan. Over the next few years this volume will increase so that there is more volume grown offshore than in New Zealand. Tree and production based royalties will see significant revenue returned to New Zealand stakeholders, including the Crown.
2. **Investment in new technologies will allow for a broader range of skilled people,** as the need for physically demanding and repetitive work decreases. Current innovation such as the use of augmentation platforms by many businesses will allow for a wider demographic to work in the industry. Visible technologies such as robotics and augmentation systems are only part of the technological ecosystem. Plant protection systems that produce fruit without pests or pesticide residues require new knowledge and skill to implement.
3. **Reducing the reliance on seasonal migrant labour and offering full time work for New Zealanders** on an FTE basis to build a more resilient labour force with a larger proportion of high skilled jobs and a smaller proportion of low skilled jobs. While reliant on seasonal labour for seasonal peaks over half the Apple & Pear workforce are permanent New Zealanders and three quarters of the permanent and seasonal workforce are New Zealanders.
4. **Iwi investment in primary industries of around \$23 billion increases Māori ownership within the industry.** Currently 3,800 Māori are working in horticulture, of which 610 are high skilled, 1,050 are skilled and 2,130 are low skilled.
5. **ROVE changes are on the horizon which will ensure that training provisions are agile and responsive** and allow for an adaptable framework that meets the needs of the industry.

### 4.3.2 Top challenges

The RSLG process has identified the top challenges for the Hawke's Bay horticulture sector as:

1. **Filling the current vacancies with local labour can be challenging** due to the natural seasonality of horticulture and the constrained availability of the workforce. Work is physically demanding and finding work fit people who are keen to work in the sector is not easy.
2. **The horticulture industry has a shortage of workers with specific skills.** These skills are different to many of the old traditional production driven skills. Workplace training cannot deliver the new skills as they require more off-job classroom learning.
3. **Availability of land and water is a concern for future growth,** due to competition with vineyard land, cropping land and pastoral farming land with irrigation supplies. Growth is requiring more

investment in infrastructure investment and upgrades including more/larger pack houses and cool stores.

4. **Permanent employment opportunities are not clearly visible**, making it difficult to attract and retain local workers. Even in the third largest horticultural region of Hawke’s Bay most schools do not teach horticulture as one of their subjects, and ones that do often target lower achieving students.
5. **Mental health issues are increasingly impacting the permanent workforce**. Industry are currently providing counselling services which are at full demand. The increased number of seasonal employees with gang affiliations has had impacts that have resulted in the need for increased security in the pack houses.

#### 4.4 Government expectations and industry response

At the 2018 Recognised Seasonal Employer (RSE) Conference then Minister of Immigration, Iain Lees-Galloway proposed to horticulture and viticulture employers that they needed to address five challenges in order to access more migrant workers. The five challenges were:

1. Doing more to employ New Zealanders
2. Improving conditions, increasing wages, and developing automation
3. Develop the infrastructure for all workers, not just RSE – e.g. providing accommodation that does not take away residential accommodation for New Zealanders
4. Stamp out worker exploitation in New Zealand and along the industry’s supply chains
5. Work with other industries, such as aged care and transportation, to help them with the industry’s experience and knowledge.

To support these challenges the industry identified a need to develop and implement an effective Workforce Development Strategy. This Strategy has been focused on addressing the five challenges outlined by the Minister and supporting growth in the New Zealand Apple & Pears industry by delivering:

- Suitably skilled workers to undertake the permanent roles available as the industry grows.
- A sufficient and planned supply of seasonal workers to undertake seasonal tasks and remove the need to declare labour shortages.
- Appropriate seasonal accommodation to house workers and remove competition for urban housing.
- Independent standardised systems, competencies, and verification of supply-chain employment practices.
- National and International leadership in eliminating exploitation from global supply-chains.

This National Apples & pears and Hawke’s Bay Horticulture Workforce Transition Plan builds on and extends the sectoral coverage of the existing apples and pears sector Workforce Development Strategy. It responds to an invitation from government to see “comprehensive, national and sector-wide workforce transition plans for the horticulture and wine industries”.

This invitation was received via a letter Ministers O’Connor and Faafoi wrote to the CEs of the horticulture sector bodies on 22 February 2021. The Ministers acknowledged the effort and commitment of the horticulture sector across a range of areas e.g. RSE worker allocation, the

concerted effort to attract and upskill New Zealanders over the last 12 months, and the range of labour market commitments made by Hawke’s Bay growers.

The Ministers also noted that COVID-19 border restrictions had exposed a significant vulnerability of the primary sector workforce by limiting New Zealand’s access to migrant workers. The Ministers thought by reducing reliance on seasonal migrant labour, the horticulture and wine workforces would be more resilient to external labour shocks like those caused by the pandemic.

The Ministers acknowledged that some seasonal migrant labour would always be needed, in particular to support harvesting and processing at peak seasons, but noted that “Government would prioritise industries that can demonstrate a comprehensive sector-wide plan to attract and keep New Zealand workers, with specific actions to address barriers around pay, conditions, and career progression”.

This Plan responds to this request and provides a structure for an ongoing, collaborative and longer-term partnership with Central and Regional Government and local iwi focused on areas that will help resolve, over time, critical labour market issues.

## **4.5 Review of attraction and retention activities over the last 12 months**

### **4.5.1 Background**

The Hawke’s Bay horticulture sector has been actively responding to labour market challenges by doing things differently and has been proactive in engaging with government to provide clear evidence the industry is doing everything it can to attract New Zealanders into available roles. This has been acknowledged by government ministers.

In November 2020 a group of Hawke’s Bay growers and RSE employers (Bostock NZ, FreshCo, Freshmax, Johnny Appleseed – The Yummy Fruit Company, Mr Apple, Taylorcorp, and Thornhill Ltd, who collectively represent 60% of the NZ export and domestic apple market and contribute over \$1b in export earnings to the NZ economy via a range a horticultural products), provided the government with a short term labour supply strategy and action plan to address the urgent and challenging labour supply issues presenting for Hawke’s Bay. The hope was the work would provide a strong basis for decisions that would need to be made before the end of 2020.

This section of the Hawke’s Bay Horticulture Workforce Transition Plan provides a short review of the attraction and retention activities undertaken by industry and government over the last 12 months, the impact these have had, decisions that were made, and the lessons they hold for the Hawke’s Bay Horticulture Workforce Transition Plan.

### **4.5.2 Hawke’s Bay horticulture short term labour supply strategy and action plan, November 2020**

The November 2020 paper specifically:

- Set out for Ministers and officials the considerable work the Hawke’s Bay horticulture and viticulture sectors were doing to meet the critical seasonal labour challenges that were presenting for the upcoming picking season;

- Highlighted the commitment Hawke’s Bay Recognised Seasonal Employers (RSE) employers were making in relation to:
  - The creation of 1000 permanent jobs in the next five years;
  - Establish mechanisms to ensure non-apprentice permanent employees are paid \$22.10 or above;
  - Work to effectively support entry to the workforce (e.g. provision of seasonal and permanent roles), and an effective staircase through to valuable and well-paying permanent employment for a range of NZers with challenging circumstances;
  - Increasing piece/bin rates for seasonal workers in line with percentage increases in the minimum wage;
  - Underwriting the accommodation and living costs of RSE workers in the event Pacific Islands countries close their borders to repatriating RSE workers; and
  - Reporting to government on how it is meeting these commitments, including by providing transparency around the distribution of seasonal pay and how piece/bin rates (and any necessary top-up rates for low productivity workers), are being used to reward skills and experience and deliver meaningful wages for seasonal work.
- Sought government agreement to provide space at government-run quarantine facilities for Recognised Seasonal Employees (RSEs) that are critically needed to fill the labour supply gap for the upcoming thinning and picking season;
- Provided a plan for accommodating returning RSE workers from COVID-free Pacific Islands countries at a facility in Hawke’s Bay that meets government MIQ requirements; that could be passed to government to run; would help to alleviate pressure from existing MIQ facilities; would allow returning RSE workers to transition in large 300-odd bubbles that avoided intermingling with other nationalities; and would assist the Government with the hard choices it is making about the relative benefit to NZ of providing space at existing MIQ facilities;
- Supported the national paper submitted by the CEO’s of NZ Apples & Pears, Horticulture NZ, NZ Kiwifruit Growers and Summerfruit NZ, and the Chair of NZ Master Contractors.

#### **4.5.3 Key points, impacts and lessons**

The following summary points can be made:

1. Hawke’s Bay growers fully implemented the commitments made to do things differently to attract NZers to seasonal roles.
2. Losses to the sector were a direct result of the lower number of RSE and other migrant workers available to assist with the 2020/21 harvest.
3. Encouraging NZers to take up roles in the industry alongside work to improve working conditions and pay will have an impact at the margin but with high employment levels will not be enough to meet labour demand in the short-term.

4. Efforts to continue to improve working conditions and pay are important and a focus of industry and grower efforts. It is not, however, only pay and other conditions (e.g. transport, flexible hours, meals, and sometimes accommodation etc) that is preventing uptake of available roles. The last 12 months have provided a strong evidence base for this.
5. These efforts need to be supported by acknowledgment of the critical role migrant workers play in meeting peak season labour demand; certainty that the industry will continue to have access to RSE workers in the short to medium-term; and a partnership between industry and government on a longer-term programme of work focused on supporting the transition to business and growing models that rely on less manual, and more higher skilled, labour.

**Table 6: Commitments and recommendations contained in the November 2020 Hawke’s Bay Short Term Labour Supply Strategy and Action Plan**

COMMITMENTS AND RECOMMENDATIONS	OUTCOME	REVIEW
<p>1. The Hawke’s Bay horticulture and viticulture sectors, along with support from central and local government and the wider horticulture industry, implemented a range of initiatives to meet critical seasonal labour challenges. These included:</p> <ul style="list-style-type: none"> <li>• A focus on jobseekers and NEETs through a close working partnership MSD</li> <li>• Supporting the corrections population back into work through a partnership with the Department of Corrections</li> <li>• A range of nationwide campaigns e.g. Bostock NZ’s “Harvest Hero”, Freshco’s “The Ultimate OE – Orchard Experience”, T&amp;G Global’s “Freshworx”</li> <li>• Engagement with schools and training providers e.g. the Pick Tiki programme and T&amp;G Global’s “Young Guns” campaign</li> <li>• Encouraging NZers to spend some time in Hawke’s Bay for the 2020/21 harvest season</li> <li>• Running two Hawke’s Bay Growers Employment Expos (“Pick the Bay”), with support from Hastings District Council</li> </ul> <p>This was on top of existing programmes and initiatives (outlined in detail in the November 2020 Hawke’s Bay Short Term Labour Supply Strategy and Action Plan):</p> <ul style="list-style-type: none"> <li>• MSD’s solo parent programme</li> <li>• Trunchers Central Hawke’s Bay Programme</li> <li>• Mana in Mahi</li> <li>• Apprenticeship programmes</li> <li>• Callaghan Innovation internships</li> <li>• EIT internships</li> <li>• Student graduate programmes with a range of universities</li> <li>• Driving programmes</li> <li>• Youth career expos</li> <li>• Orchard open days</li> </ul>	<p>√ Fully implemented</p>	<ul style="list-style-type: none"> <li>• Despite this extensive mobilisation of resources and work not enough NZers were available to meet peak labour demand.</li> <li>• The 2020/21 Apple and Pears harvest is estimated to be 14% down compared to last year. This is the equivalent to a loss of about \$130 million in export revenue for NZ and around \$70 million in export revenue for Hawke’s Bay.</li> <li>• While new campaigns to attract NZers to 2020/21 harvest roles were successful in raising interest, data from this activity highlighted the difficulty of translating expressions of interest into placement in roles. Reasons included: being unavailable over the required timeframe; fitness for job; underage; lack of commitment; and family or animal obligations that could not be accommodated.</li> <li>• The November 2020 work estimated that around 1365 additional NZers could be encouraged to take up roles at the peak of the harvest (March 2021). This still left a gap of around 2808 roles (in Hawke’s Bay) at the peak of the season.</li> <li>• In the end growers and packers estimate there was a gap of around 2104 roles in Hawke’s Bay at the peak of the season. There were climatic conditions that resulted in reduced volumes (e.g. cool weather affected fruit size) meaning the forecasts were pretty close to. This suggests additional attraction efforts did encourage more NZers to roles but highlights that the labour demand/supply gap cannot not be filled with NZers alone.</li> <li>• Data from growers and packhouse operators has also highlighted the high attrition rate of new hires over the season (over 50% in many cases).</li> </ul>

<ul style="list-style-type: none"> <li>• KPI (Kiwi Pick Initiative) – which facilitates workers moving from other areas to HB</li> <li>• Job share opportunities for people with disabilities</li> <li>• Collaboration with local industry and businesses to workshare with the goal of providing continuous employment</li> <li>• Subsidised staff meals or free lunches and the provision of fresh produce throughout the season</li> <li>• Free transport and a range of transport initiatives</li> <li>• Assistance with accessing accommodation. In some cases the provision of accommodation for NZers</li> <li>• Taiwhenua partnership</li> <li>• PIP- People in Progress</li> <li>• MSD and T&amp;G Global’s Sustainable Employer Employee Development (SEED)</li> <li>• ProgrammeSEED Programs – Seasonal Employee Employer Development</li> <li>• LSV (Limited Service Volunteer)</li> <li>• Youth rangatahi initiatives</li> <li>• Flexible working hours</li> <li>• Pastoral care</li> </ul>		<ul style="list-style-type: none"> <li>• Many Hawke’s Bay growers and processors are now also managing some quite significant impacts on their workplaces as a result of recruiting individuals suffering from severe behavioural issues</li> <li>• The behavioural issues and the chronic absenteeism relating to recruiting a NZ workforce this season are new and unusual in their scale. They have added significant extra to the labour shortage crisis.</li> <li>• The behavioural issues, unsustainably long hours, and under staffing have resulted in a lot of permanent New Zealand workers questioning their commitment to doing another season like that again.</li> <li>• Without clarity that there will be enough seasonal workers permanent workforces are under threat of collapse.</li> <li>• There are examples of skilled workers moving to Australia where their industries are better supported by Government policy settings.</li> <li>• Orchard blocks are being pulled out and not replaced.</li> <li>• Nursery tree orders are being cancelled.</li> </ul>
<p>2. The Hawke’s Bay industry sought Government agreement to provide space at government-mandated quarantine facilities (either existing and/or those that could be created in Hawke’s Bay) for RSE workers needed for the upcoming thinning and picking season.</p>	<p>Partially implemented</p>	<ul style="list-style-type: none"> <li>• This was partly met.</li> <li>• The Government made space available for 2000 RSE workers to be deployed nationally. This was less than half the number that was required to meet the labour supply gap in Hawke’s Bay alone.</li> </ul>
<p>3. The Hawke’s Bay industry noted its desire to work with government on a multi-year strategic partnership that allows the industry to grow and provide meaningful permanent employment for NZers and outcomes for our communities.</p>	<p>✓</p>	<ul style="list-style-type: none"> <li>• This work is in train.</li> <li>• The Hawke’s Bay &amp; A&amp;P sectors industry has committed to partnering and collaborating with the Government on developing a Hawke’s Bay Horticulture Workforce Transition Plan</li> </ul>
<p>4. The Hawke’s Bay industry noted that as part of a multi-year strategic partnership it was willing to commit to creating 1000 permanent jobs in the next five years;</p>	<p>✓</p>	<ul style="list-style-type: none"> <li>• The Hawke’s Bay horticulture &amp; A&amp;P sectors industry recommits to this undertaking as part of this Workforce Transition Plan.</li> </ul>
<p>5. Hawke’s Bay RSE employers committed to:</p>		<ul style="list-style-type: none"> <li>• The Hawke’s Bay horticulture &amp; A&amp;P sectors industry recommits to these undertakings as part of this Workforce Transition Plan.</li> </ul>

<ul style="list-style-type: none"> <li>• Ensuring mechanisms to ensure all non-apprentice permanent employees are paid \$22:10 or above;</li> <li>• Effectively support entry to the workforce (e.g. provision of seasonal and permanent roles) and an effective staircase through to valuable and well-paying permanent employment for a range of NZers with challenging circumstances;</li> <li>• Increasing piece/bin rates for seasonal workers in line with percentage increases in the minimum wage; and</li> <li>• Reporting to government on how it is meeting these commitments, including by providing transparency around the distribution of seasonal pay and how piece/bin rates (and any necessary top-up rates for low productivity workers) are being used to reward skills and experience and deliver meaningful wages for seasonal work;</li> </ul>	<p style="text-align: center;">✓ (except paying \$22:10 which is in the process of being implemented)</p>	<ul style="list-style-type: none"> <li>• All non-apprentice permanent employees are paid at least \$22:10 or above (this has not been fully implemented yet but employers are recommitting to this undertaking).</li> <li>• Piece rates for pickers increased 18% for the 2020/21 season, mean hourly rates increased 14% from \$21.68 in 2020 to \$24.76 in 2021 harvest. This is an increase in picking wages from \$55m to \$65.1m or \$10.1m.</li> <li>• Employers are actively building effective staircasing from seasonal and entry-level permanent roles through to valuable and well-paying permanent employment in employee support and employer-led training programmes.</li> <li>• Employers are developing and funding internal best practice systems that provide specific transferable skills to workers in seasonal and fulltime roles</li> <li>• Hawke’s Bay employers are working collaboratively with the RoVE entities/structures to ensure fit for purpose training</li> </ul>
<p>6. The industry noted it was working closely with the governments of Pacific Island Countries to develop specific repatriation protocols and plans so that there is clear agreement and steps on repatriation;</p>	<p style="text-align: center;">✓ Fully implemented</p>	<ul style="list-style-type: none"> <li>• NZAPI led repatriation efforts on behalf of all horticulture RSE employers. It worked closely with the NZ Government and the governments of Pacific Island Countries to develop repatriation plans, charter flights, secure spaces in MIQ etc. Thousands of RSE workers have been successfully repatriated, and NZAPI continues to lead the repatriation efforts for multiple Pacific Island countries on behalf of RSE employers.</li> <li>• While workers were stuck in the region last year NZAPI chaired the Hawke’s Bay Civil Defence Emergency Management Committee supporting Migrant workers.</li> <li>• NZAPI is currently supporting the coordination of the vaccination process for RSE workers. This is a prerequisite for repatriation.</li> </ul>
<p>7. Hawke’s Bay RSE employers committed to underwriting the accommodation and living costs of RSE workers in the event Pacific Islands countries close their borders to repatriating RSE workers. This would safeguard the wellbeing of RSE workers and lower any risk to the NZ taxpayer. This would be subject to existing</p>	<p style="text-align: center;">✓ Fully implemented</p>	<ul style="list-style-type: none"> <li>• The Hawke’s Bay horticulture industry recommit to this undertaking as part of this Workforce Transition Plan.</li> </ul>

<p>rules around ability to work in other sectors and other parts of the country in this context remaining;</p>		
<p>8. Hawke's Bay RSE employers committed to ensuring utilisation of workers was shared across regions and employers so that high value critical harvest tasks were prioritised where possible.</p>	<p style="text-align: center;"><b>✓</b> Fully implemented</p>	<ul style="list-style-type: none"> <li>• NZAPI operationalised the first border exception that successfully brought 2,012 RSE into New Zealand and through MIQ over a six week period between Jan-March 2021.</li> <li>• NZAPI engaged closely with NZ Government departments, Pacific Governments, and airlines; contracted flights, underwrote all charter and MIQ costs, and led the mobilisation of NZ's first post-COVID migrant workforce on behalf of the horticulture industry.</li> </ul>
<p>9. Hawke's Bay RSE employers sought government agreement to work with the region to develop the Angus facility at 507 Railway Road, Hastings, as a MIQ facility that could be used specifically for returning RSE workers from COVID-free Pacific Island countries;</p>	<p style="text-align: center;"><b>X</b></p>	<ul style="list-style-type: none"> <li>• Government did not accept this recommendation.</li> <li>• The industry is focused on working with government to ensure adequate MIQ space is available for the RSE workers required to support the 2021/22 harvest season and that the flow of RSE workers through MIQ is aligned with when the workers are needed in NZ.</li> <li>• The industry supports NZ government efforts to support Pacific Island Countries with the rollouts of their COVID-19 vaccination programmes and asks that consideration be given to allowing RSE workers from COVID-free countries who have had the COVID-19 vaccine to travel without quarantine to NZ.</li> </ul>

## 5.0 CURRENT STATE: WHAT DOES THE NATIONAL APPLES & PEARS AND HAWKE’S BAY HORTICULTURE SECTOR LOOK LIKE NOW

### 5.1 Production and export

The apple and pears sector plays a critical role in driving a number of regional economies (from production to post-harvest, logistics and supply chain management and the extremely sophisticated eco-system of suppliers that has developed to support this global frontier sector).

In terms of the apples and pears sector, Hawke’s Bay represents around 65% of hectares planted nationally; 67% of gross national volume; and 66% of national export volume. The region is also home to 57% of apples and pears growers and 49% of NZ’s packhouses. Many of the apples and pears growers are also involved in growing other horticultural crops (for the domestic market and export) and are the country’s main employers of RSE workers.

**Table 7: Apples & Pears industry snapshot by region**

	NZ	Hawke’s Bay	Nelson	Otago	Gisborne	Rest of NZ*
<b>Planted area (ha)</b>	10,396	<b>6,789</b>	2,503	469	295	340
<b>Export Growers</b>	270	<b>153</b>	59	17	21	20
<b>Packhouses</b>	49	<b>24</b>	17	3	3	3
<b>Gross volume (MT)</b>	587,373	<b>392,412</b>	147,423	19,151	14,561	13,825
<b>Export volume (MT)</b>	402,219	<b>264,301</b>	105,979	16,799	6,792	8,348
<b>Domestic (MT)</b>	68,215	<b>47,368</b>	14,669	162	4,318	1,699
<b>Process (MT)</b>	116,939	<b>80,744</b>	26,775	2,190	3,451	3,778

\* Note: Rest of NZ includes Auckland, BOP, Canterbury, Horowhenua, Waikato, Wairarapa

**Figure 1: Apples & Pears: Planted area and gross volume by region**

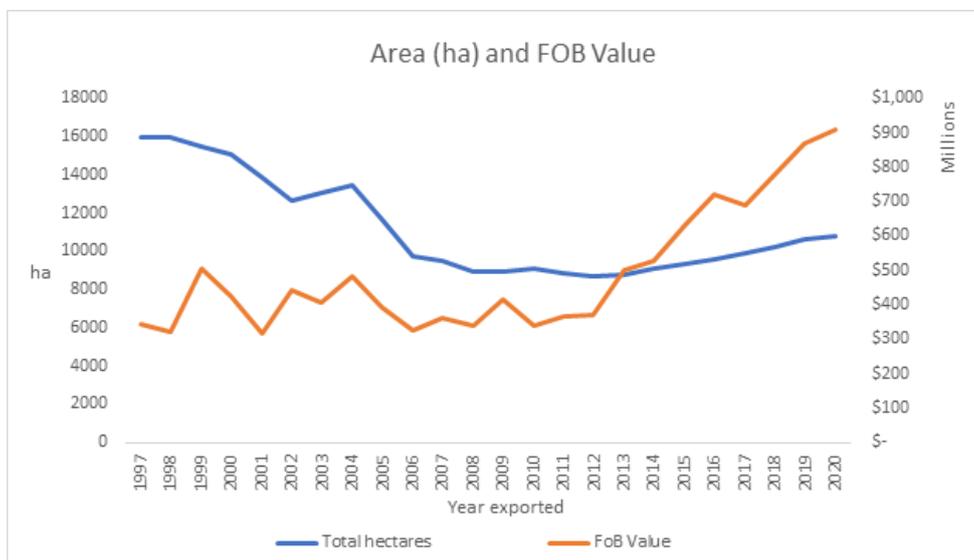


The New Zealand Apple and Pear industry is seeking to continue its growth and maintain its position as the world’s top pipfruit industry. The industry has been consistently ranked as the most competitive apple industry in the world<sup>3</sup>.

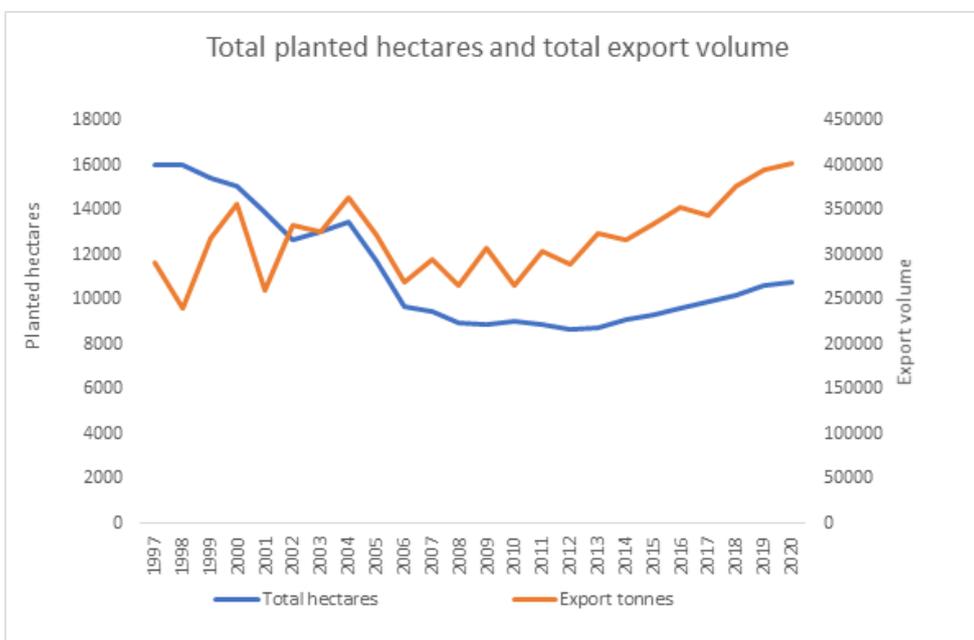
<sup>3</sup>Based on The World Apple Report published annually by Belrose Inc. - <http://www.e-belrose.com/>

Between 1998 and 2020 the industry decreased in area by 32% from 16,000ha to 10,820ha while increasing the value of exports by 182% (\$322m to \$909m). Over this period the value per kilogram increased by 90% from \$1.19/kg to \$2.26/kg indicating the industry’s considerable success at adding value to volume.

**Figure 2: Total planted hectares and export value**



**Figure 3: Total planted hectares and total export volume**



Although planted hectares has reduced by 32%, export volumes have increased by 38%. Figure 3 above shows growth per hectare exceeding the growth in area over the last decade.

The 2020/21 season was challenging for apple and pear growers and exporters. They had to deal with significant labour shortages arising from border restrictions, significant hail storms (affecting the Nelson and Central Otago regions), and COVID-19 induced disruptions and delays to shipping schedules and the supply of refrigerated containers. On the positive side overall harvest conditions for 2021 were relatively favourable. There were no days lost for rain and although fruit size was down the colour of the fruit was extremely good. This meant that cultivars that would normally require 3-4 picks were completed in 2-3. Pickers were able to pick on average 1 more bin per day (e.g. 5 bins rather than 4). This was a productivity increase of approximately 25% per worker over and above a normal season with poorer colour. A more normal colour season with more normal weather puts an additional 100,000MT at risk.

The Ministry for Primary Industries' 2021 Situation and Outlook for Primary Industries (SOPI) report notes that an export volume between 342 and 351 thousand tonnes is estimated for the 2021 crop, down by 13 to 15 percent on the 2020 export crop. Export revenue for the year ending December 2021 is expected to be in the range of \$750 to \$800 million, down from \$916 million in 2020.

The SOPI report forecasts no increase in the total planted area of apples and pears over a two-year period (due to continuing labour shortages, higher wage rates, and international supply chain disruptions incentivising the removal of poorer performing orchard blocks and varieties and the lapsing of leases on many blocks). However, production is expected to continue to increase driven by recent plantings maturing and productivity gains from high density plantings. Annual export volumes are expected to increase steadily over the forecast period, assuming average climatic conditions, albeit at a slower pace than previous forecasts. The crop that is currently being prepared (pruned) for export in 2022 has been estimated to be 463,000MT. This is 115,000MT bigger than the 2021 crop. If 2020 is a normal colour year around 215,000MT, worth \$485.9m to the NZ economy, is at risk if there is no change to seasonal labour supply (i.e. assuming the same seasonal labour supply as 2021).

In 2013 NZAPI commissioned a report called "Pathway to a Billion Dollar Industry". Research had shown that as GDP growth rose in key Asian markets the consumption of imported apples increased proportionately. The research indicated that between 2012 and 2022 the consumption of imported apples in key Asian markets was expected to double. NZAPI sought to quantify that growth and identify how much of that growth the NZ industry could reasonably be expected to supply. The report modelled that the NZ Apple and Pear industry could grow from \$341 million in 2012 to \$1 Billion Dollars by 2022.

The Billion Dollar prediction would have been achieved this year if it was not for labour constraints and weather events. The industry is now setting its sights on surpassing \$2 billion before 2030, which is supported by current business as usual modelling. This will create 1,702 additional permanent jobs and 9,181 additional seasonal roles. The area planted in apples and pears is forecast to increase from 10,760ha currently to 15,250ha by 2030. The industry would like to do even more with a comprehensive transformation partnership with Government.

## **5.2 Plant genetics, investment and productivity**

The NZ apple and pears industry has changed significantly since deregulation in 2001. At the time of deregulation the industry had a variety mix that did not suit global market opportunities, new exporters in the deregulated industry did not have the buyer networks or understand the commercial

environment of international shipping and trade, and years of poor returns limited the availability of capital to invest. Nonetheless the newly deregulated industry set out on a path of transformation.

Over the next ten years the industry replanted its orchards with new varieties that were in high demand in the new and growing Middle Eastern and Asian markets. The industry retained its investment in the world's best apple and pear breeding programme, called Prevar<sup>4</sup>, in partnership with Plant & Food Research.

Targeted research investment developed unique and world leading organic and conventional plant protection programmes. These programmes, called Apple Futures, outperformed all New Zealand's competitors. This was achieved by meeting the regulatory phytosanitary market access challenges of the high paying Asian markets and also exceeding the private commercial pesticide residue and Good Agricultural Practice (GAP) requirements of the high-paying European retailers. These innovations helped maintain access to the top North American and European retailers and clearly demonstrated that the developing markets of Asia, Middle East and North Africa was where the industry's future growth lay.

This focused industry-wide effort has supported faster growth than any other export industry in NZ. The horticulture sector is in many ways a unicorn sector in plain sight. As the data above highlights the industry has been adding considerable value to volume and it would be valuable to dig into this productivity story in more detail (and this is included as an action in the Action Plan).

The global commercialisation of New Zealand-owned and managed apple and pear cultivars will provide the opportunity for several businesses to grow exponentially. Further work to tease out the full productivity story of the sector should not only take into account export FOB values but also revenue streams from the global commercialisation of new cultivars.

Digging into the productivity story is important as there is currently a view that the significant real output growth in the sector has been a simple factor of access to RSE workers<sup>5</sup> and that this may (from a literature review perspective) be having unintended consequences on the local labour market. The industry understands that this is concerning policy makers and politicians and the industry would value working with government to explore a fuller discussion and support robust analysis around the full horticulture productivity story and the impact this has had on the labour market, business models and broader economic growth.

## **5.3 Labour market**

### **5.3.1 Labour market data**

As noted earlier this paper uses New Zealand apples and pears sector data as the basis for the analysis that underpins key labour market findings and forecasts. This data could be extended or replaced with more relevant sectoral and regional data as needed.

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<sup>4</sup> [Prevar](#)

<sup>5</sup> 'Picking cherries: Evidence on the effects of temporary and seasonal migrants on the New Zealand economy', NZIER report to the New Zealand Productivity Commission, February 2021

In 2018 NZAPI conducted extensive surveying of its members which led to a detailed understanding of permanent and seasonal labour needs relative to planted area and production data.

Those surveys indicated that for every hectare of orchard planted the industry required 0.17 fulltime permanent (FTE) orchard workers. For every 1000MT produced the industry required 2.36 post-harvest permanent workers. For every 1000MT packed the industry required 1.25 permanent workers in corporate head office jobs. See Annex 11.

These survey coefficients have been used to estimate the permanent and seasonal roles across orchard and post-harvest operations up until 2021 for New Zealand and Hawke’s Bay. See Tables 8 and 9 below. Note: These figures do not include the creation of support industry jobs outside of orchard gates, packhouses, and head offices.

**Table 8: New Zealand horticulture roles across orchard and post-harvest operations**

		2018	2019	2020	2021
Area (ha)		10,200	10,586	10,812	11,190
Gross (MT)		589,940	566,173	597,179	682,606
Export (MT)		377,189	395,460	408,954	443,694
Orchard	Permanent	1,734	1,800	1,838	1,902
	Seasonal – Picking	7,961	7,641	8,059	9,212
	Seasonal – Thinning	5,667	5,881	6,007	6,217
	Seasonal - Pruning	2,217	2,301	2,350	2,433
Packhouse	Permanent	1,392	1,336	1,409	1,611
	Seasonal	3,775	3,796	3,976	4,272
Corporate		564	567	594	638
Total	Permanent	3,690	3,703	3,841	4,151
	Seasonal – picking + packing	11,737	11,436	12,035	13,484
Cumulative increase permanent			13	151	461
Cumulative increase picking + packing			-301	298	1,747

**Table 9: Hawke's Bay horticulture roles across orchard and post-harvest operations**

		2018	2019	2020	2021
Area (ha)		6,340	6,521	6,749	6,985
Gross (MT)		387,025	389,956	403,604	417,730
Export (MT)		246,865	254,641	263,554	272,778
Orchard	Permanent	1078	1109	1147	1188
	Seasonal – Picking	5223	5263	5447	5637
	Seasonal – Thinning	3522	3623	3750	3881
	Seasonal - Pruning	1378	1418	1467	1519
Packhouse	Permanent	913	920	953	986
	Seasonal	2461	2541	2619	2701
Corporate		368	379	391	403
Total	Permanent	2359	2408	2491	2577
	Seasonal – picking + packing	7684	7804	8066	8338
Cumulative increase permanent			49	132	218
Cumulative increase picking + packing			120	382	654

In 2019 the National apples and pears sector employed around 3,703 permanent employees and around 11,436 seasonal workers at the peak of harvest (picking and packing roles). NZ workers made up 79% of the seasonal packing workforce and migrant workers made up 79% of the seasonal harvest picking workforce. The workforce was skewed this way due to the heavy workloads required to pick into 18kg picking buckets while using 1.8 – 2.4m ladders. It is estimated that the sector currently supports around 13,000 seasonal roles in total throughout the year and indirectly, through the supply chain, around 5,750 permanent local workers<sup>6</sup>.

The 2020/21 harvest was heavily impacted by border settings and decisions which restricted the number of RSE workers available to employers. It is estimated that there was a gap between labour demand and labour supply of around 2104 roles in Hawke's Bay at the peak of the season, representing the much smaller number of migrant workers in the region available for harvest roles. This was despite a significant mobilisation of industry and government resources into additional campaigns to attract NZers to the roles.

The devastating Boxing Day hail storm in Nelson meant that their gross crop was forecast to be down 30% or 50,000MT. It should be noted that a normal crop in 2022 will require an additional 675 pickers and 420 packers.

To pick a hectare of apples a picker will climb over 20 vertical kilometres while carrying 60 metric tonnes of fruit. Due to this high physical workload the apples and pears industry uses more RSE workers than other ground-based industries of similar area and volume.

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<sup>6</sup> Estimate based on research paper 'National and Regional Economic Impacts of the New Zealand Pipfruit Industry', by Sean Bevin, Economic Solutions, 2014

Table 10 below captures RSE workers employed at peak harvest (which is usually around 13 weeks) across NZ and in Hawke’s Bay. In full-time equivalent (FTE) terms the numbers are much lower (at peak harvest the 7,000 RSE workers equate to around 1,750 FTEs).

Seasonal labour has been, and will continue to be over the short to medium-term, the key ingredient behind the sector’s growth and its ability to grow permanent employment opportunities for NZers (e.g. in areas such as management, quality control, distribution, and sales and marketing). In 2019, 45% of RSE employers stated that their business had expanded that year due to the labour the RSE scheme provides (from MBIE’s 2019 RSE Survey).

Table 10 provides a snapshot of the importance of RSE in supporting permanent employment. One RSE FTE equivalent supports the permanent employment of around 2.4 workers directly within the industry and around 5.4 jobs in the wider supply chain.

**Table 10: RSE FTEs and support for permanent roles**

	RSE workers	RSE FTE equivalent	Permanent roles in industry	Permanent roles across supply chain	RSE FTE /Industry permanent multiplier	RSE FTE /wider permanent community
<b>NZ (2019)</b>	7,000	1,750 (13/52*7000)	4200	9,450	2.4	5.4
<b>Hawke’s Bay (2019)</b>	4,000	1,000 (13/52*4000)	2408	5750	2.4	5.4

Research work carried out by NZAPI in 2016 mapped out the skill level requirements across production, post-harvest and head office roles and the percentage of workers in those roles. This is captured in Tables 11 and 12 below.

**Table 11: Qualification levels, roles and estimated remuneration of fulltime workforce across New Zealand**

Level	Qualification level	Production	No. of workers (2019)	Post-Harvest	No. of workers (2019)	Salary range/ wage rate
Senior Executive	Level 6-10	0.99%	18	1.41%	27	\$120k - \$220k
Senior Manager	Level 6-7	4.95%	89	2.82%	54	\$90k - \$180k
Manager	Level 4-6	4.95%	89	8.45%	161	\$70k - \$150k
Assistant Manager	Level 4-5	7.92%	143	8.45%	161	\$60k - \$80k
Senior Worker	Level 4	27.72%	499	22.54%	429	\$22.10/hr - \$30/hr
Worker	Level 3	53.47%	962	56.34%	1072	\$20/hr - \$25/hr
<b>TOTAL</b>			1800		1903	

**Table 12: Qualification levels, roles and estimated remuneration of fulltime workforce in Hawke’s Bay**

Level	Qualification level	Production	No. of workers (2019)	Post-Harvest	No. of workers (2019)	Salary range/ wage rate
Senior Executive	Level 6-10	0.99%	11	1.41%	13	\$120k - \$220k
Senior Manager	Level 6-7	4.95%	55	2.82%	26	\$90k - \$180k
Manager	Level 4-6	4.95%	55	8.45%	78	\$70k - \$150k
Assistant Manager	Level 4-5	7.92%	88	8.45%	78	\$60k - \$80k
Senior Worker	Level 4	27.72%	307	22.54%	207	\$22.10/hr - \$30/hr
Worker	Level 3	53.47%	593	56.34%	518	\$20/hr - \$25/hr
<b>TOTAL</b>			1109		920	

### 5.3.2 Training

The apples and pears sector has been actively working to ensure there is a pipeline of talent coming through NZ education and training establishments, and that the training being offered meets employer and employee needs.

Table 13 below captures the number of students that were in training programmes in Hawke’s Bay in 2019. These programmes have been offered via the Eastern Institute of Technology (EIT) and the PrimaryITO in Hawke’s Bay and have specific content provided by NZAPI. Students at L3-5 receive access to the NZAPI website and industry tools.

NZAPI has also worked closely with:

- Massey University to reinstate the Bachelor of Horticulture Science and to link industry internships to graduate options from Massey and Lincoln;
- EIT and PrimaryITO to co-design a Diploma in Post-Harvest management specifically for Pipfruit and Kiwifruit facilities; and
- PrimaryITO to co-design and deliver a ‘supervisor training programme’ (which was provided to over 200 people in 2021).

The number of people undertaking the Pipfruit Apprenticeship Programme has increased by 200% since 2020 when Government increased funding to apprenticeships and increased the range of fee free options.

This will see a large increase in learners completing this qualification in 2023 but this will only just keep pace with development and workforce needs for established businesses; it will nowhere near be sufficient for new businesses and rapidly expanding and innovative organisations like Rockit Apple, T&G Global, Craigmore Farming and the Wairoa based Tātou Tātou o Te Wairoa.

Although NZAPI have welcomed the efforts to date by training providers there are still gaps in the competencies achieved by learners and the consistency of delivery across regions. NZAPI are actively

working to implement the RoVE reforms in a way that reimagines the way vocational education is designed and delivered for horticulture’s future workforce.

**Table 13: Number of students in training programmes in Hawke's Bay**

Programme	No. of students
L2: Pipfruit basic trainee programme	62
L3: Vehicle, Infrastructure and Machinery	42
L3: Pipfruit Trainee Programme	40
L4: Pipfruit Trainee Programme	19
L5: Post Harvest Diploma Programme	10
Pipfruit Apprenticeship Programme	58

#### 5.4 Māori horticulture investment and partnerships

Māori entities are increasingly participating in the horticulture industry through purchasing and developing new orchards. This has been driven by a desire to transition suitable pastoral land and forestry holdings to more sustainable activities and to increase the income and job-generating ability of these holdings.

Currently Māori own approximately 400,000 hectares of land in ‘farms engaged in primary production activities’<sup>7</sup>. Less than one percent of this land is in horticulture but it is growing quickly. The Māori horticulture industry quadrupled in size between 2006 and 2019, with horticulture land growing from 1,000 hectares in 2006 to 4000 hectares in 2019. This is expected to continue to grow quickly over the next decade.

The Māori share of the horticulture industry currently sits at around five percent but this may double in size in as little as ten years given various Māori entities have indicated that they are focussing on significant expansions (“Māori in Horticulture”, BERL, 2020).

In Hawke’s Bay there is significant Māori interest and investment in horticulture, particularly in northern Hawke’s Bay where there is considerable flat and fertile land; a climate which supports an early harvest window; and easier and plentiful access to water.

A number of Māori businesses and Post-Settlement Governance Entities (PSGEs) are actively pursuing a range of projects and initiatives from – orchard development; the development of a trial orchard near Wairoa to substantiate the growing conditions of premium varieties of apples (if successful this is likely to spark considerable interest in land diversification); and work with cluster groups (representing around 40 Māori land blocks and around 700ha of land) to support feasibility studies on the suitability for apple growing on these blocks.

There is serious focus around the horticulture opportunity for Māori in Hawke’s Bay. The businesses and entities involved are taking a long-term view of what is needed to embed cultural values with commercial objectives so that these investments support positive outcomes for communities e.g.

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<sup>7</sup> In total there is around 1.5 million hectares of Māori freehold land, of which large sections are in indigenous forest and hill country.

permanent and well-paid jobs; better environmental outcomes; and growing capability and ability to invest in, and grow, the wider supply-chain and eco-system that is required to support premium horticulture and highly skilled jobs.

Māori investment in horticulture in Hawke’s Bay is focused on building business models that are not so dependent on seasonal migrant labour. This is involving investment in state of the art (“robot-ready”) growing systems and the pastoral care required to effectively support people into, and through, training and into the workforce. This requires a long-term commitment of resources and energy and is an area that that could be scaled up with greater Central Government support.

NZAPI have recently been invited to join the Plant and Food Māori Strategy Group to ensure that Iwi looking to invest in Pipfruit and pursue research funding have access to latest industry knowledge and that NZAPI better understands how mātauranga maori can be embedded in, and positively impact, future work.

## **5.5 Current activity and initiatives to Attract, Grow and Retain talent**

The horticulture sector has been working hard to encourage NZers to engage with horticulture. This work is not starting from scratch and significant progress has been made<sup>8</sup>. The industry continues to work hard at educating people about job and career flexibility, availability, and the training support and pastoral available for workers in the industry.

There are three key layers of activity and initiatives:

1. Those being led by growers, packers and marketers;
2. Regionally-led initiatives (which are potentially scalable nationally if they prove successful); and
3. Wider horticulture industry-led which have a national focus.

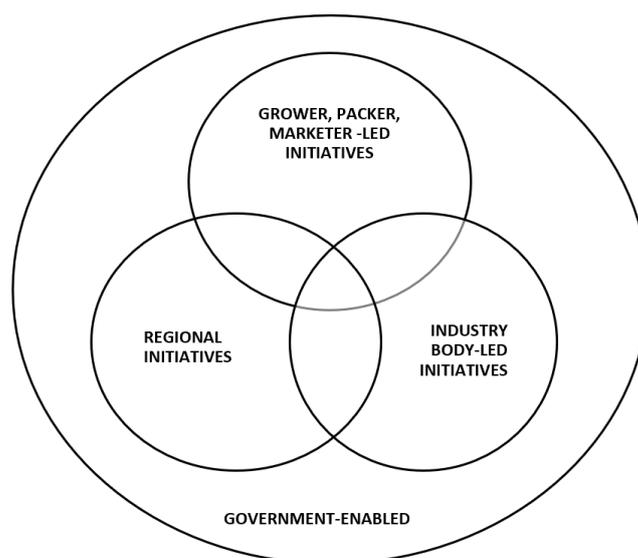
Hawke’s Bay is leading the piloting of many of the apples and pears sector regional initiatives. Many of these programmes are government-enabled and there is considerable opportunity to build on the strong partnership that has built between industry and government through the development of these initiatives.

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<sup>8</sup> The national Apples & Pears sector has an existing Workforce Development Strategy which it has been implementing.

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**Figure 4: Industry-led and government enabled**



**5.5.1 Grower, packer and marketer-led action and initiatives**

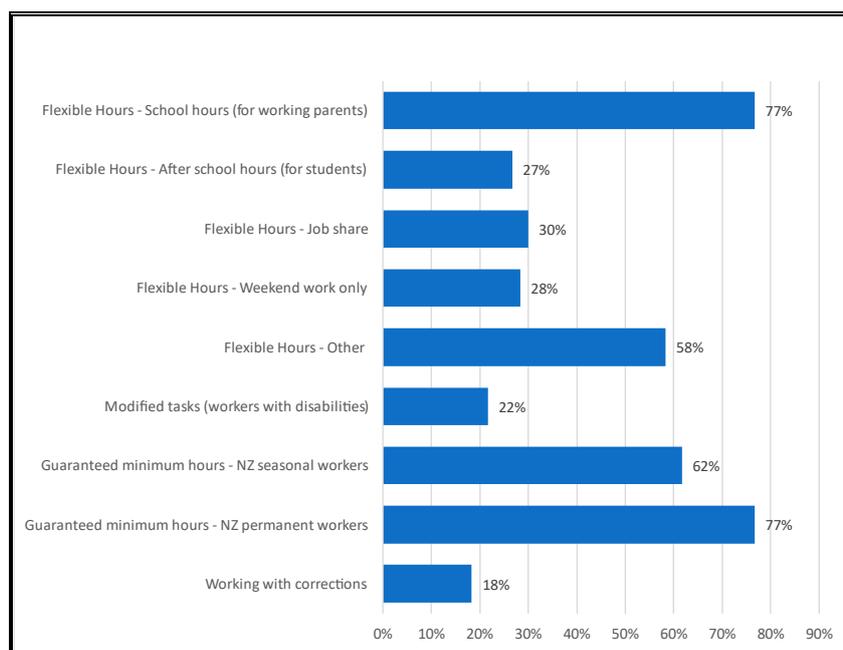
In recent years growers, packers, and exporters have established significant initiatives and offerings to help solve specific barriers to work and increase the attractiveness of horticulture roles. In relation to RSE workers 100% of RSE employers offer transport and accommodation to meet the needs of the workers.

Table 14 below captures a number of examples of activity underway and Figure 5 highlights the extent to which apples & pears employers in Hawke’s Bay and Nelson are supporting NZ employees to overcome a range of barriers to work.

**Table 14: Initiatives to help solve barriers to work**

Key areas of focus	Examples of action/activity
<b>1. Accommodation</b>	<ul style="list-style-type: none"> <li>• Provision of houses, campervans and caravans</li> <li>• Reserved spaces at camping grounds and backpackers</li> <li>• Work with accommodation providers to create accommodation solutions where this is an impediment for out of town NZers</li> </ul>
<b>2. Transport</b>	<ul style="list-style-type: none"> <li>• Provision of free transport from accommodation to orchards/packhouses</li> <li>• Ride-sharing options and guided convoys</li> <li>• Grouping of workers together that rely on a single vehicle to get to place of work so they are working at a common location</li> </ul>
<b>3. Flexible working</b>	<ul style="list-style-type: none"> <li>• Solo parent programs. This enables job sharing so that part-time shift work is available.</li> <li>• Newly created 9.15am – 2.15pm shifts to fit in with school hours</li> <li>• Reduced days of work for some who can work full hours per day but not a full week</li> </ul>

**Figure 5: Apples & Pears employers in Hawke's Bay and Nelson offering NZers specific work arrangements**



### 5.5.2 Regional initiatives

The following projects are currently underway in Hawke's Bay and are being managed by NZAPI. These projects will be evaluated at the completion of the first funding rounds and then if effective will be deployed to other regions as appropriate and as funding becomes available.

**Table 15: Industry-led initiatives in Hawke's Bay**

<b>Tū Te wana</b>	<p>This is TEC-funded 16-week program designed for students between the ages from 17.5 years to 19 years. It is designed to allow students to learn and grow in a nurturing and safe environment. Trainees will graduate with a driver's license, horticultural industry knowledge, soft skills required to effectively participate in the working world and the Primary Industries Level 2 Certificate.</p> <p>Tū te wana also provides:</p> <ul style="list-style-type: none"> <li>• Pick up, drop off</li> <li>• Healthy lunch</li> <li>• MSD support</li> <li>• Industry engagement opportunities</li> <li>• Success planning</li> <li>• There are three desired outcomes:</li> <li>• Employment with two corporate employers which is a long-term cadetship and sustainable employment</li> <li>• Higher learning opportunities</li> <li>• or a direction for the trainees in the career pathway they desire.</li> </ul> <p>To date there are currently 8 trainees on the program which is now in week 9.</p>
<b>He Huarahi Hou Pilot</b>	<p>The He Huarahi Hou Pilot is a Te Puni Kokiri funded project designed to assist and transition young Māori sole parents into flexible seasonal work hours that suit their availability needs.</p> <p>That includes.</p> <ul style="list-style-type: none"> <li>• Providing transport to and from work for each participant</li> </ul>

	<ul style="list-style-type: none"> <li>• Working alongside the participants to address their broader whanau social responsibilities and barriers when they occur.</li> <li>• Developing a workplan that suit their individual availability needs. That includes working on solutions that address their tamariki care needs while they are at work.</li> </ul> <p>Providing pre-employment training that includes.</p> <ul style="list-style-type: none"> <li>• First aid (completed)</li> <li>• Health and Safety (TBC)</li> <li>• Planning and budgeting (completed)</li> </ul> <p>The pastoral Care support provider for this project is the Flaxmere Māori Wardens Trust. The Ministry of Māori Development (Te Puni Kokiri) has provided funding for two Māori Wardens to deliver the pastoral care for the Sole Parents.</p> <p>The project is being piloted at Freshmax and the hours of work are from 9am to 3am. Twelve sole parents were registered on the program when it commenced.</p> <p>To date eight are still involved. The four who left the program were due to either personal health or left to work in another packhouse.</p>
<p><b>Growing Futures Project</b></p>	<p>This MSD-funded program is for 30 participants who have a current or past relationship with the Department of Corrections. The program is designed to provide participants with pre-employment training, pastoral care as well as on job work experience in the horticulture industry. The objective of the project is to support the participants into long term sustainable employment.</p> <p>Funding provided by MSD has enabled NZAPI to recruit Thornhill to manage the service delivery outcomes for the project. The project will run for 12 months and to date 11 participants are registered on the program.</p>
<p><b>Pastoral Care Support Plus</b></p>	<p>The aim of MSD-funded Pastoral Care Support Plus project is to provide additional support for eligible participants who have secured employment within the Horticulture Industry to remain in employment for the duration of the season.</p> <p>NZAPI have been contracted by MSD to provide oversight and manage the project.</p> <p>The expected outcomes from this project include:</p> <ul style="list-style-type: none"> <li>• 350 workers will participate in the project.</li> <li>• A minimum of 175 workers will remain in paid employment for the period of their contract.</li> </ul> <p>To date employers have registered over 230 workers who qualify for the incentive payment of \$1,000.</p>
<p><b>Student recruitment</b></p>	<p>NZAPI in conjunction with the Principals Association, the Ministry of Education, and Hastings District Council, works with High Schools in the region to support work in orchards and packhouses throughout Hawke’s Bay.</p> <p>To date 150-200 students have been placed and have supported industry through Harvest 2021, with many achieving ongoing employment opportunities.</p>
<p><b>Combating worker exploitation</b></p>	<p>The apple and pear sector is highly engaged on combating exploitation of workers. The industry uses GLOBALG.A.P. as its international assurance standard in social practice conformity. NZAPI has taken international committee positions on the GLOBALG.A.P. Risk Assessment Social Practice (GRASP) stakeholder committee and the overall GLOBALG.A.P. Board.</p> <p>NZAPI has partnered with business survey company Ask Your Team to survey seasonal workers to gather information on conditions of work, accommodation and exploitation risks. The survey covers GLOBALG.A.P. Risk Assessment on Social Practice (GRASP) questions that cover baseline employment conditions of NZ Laws and more targeted questions on conditions of work. Added to these are questions from the United Nations Human Rights Commission on exploitation and modern slavery.</p> <p>NZAPI has had the survey translated into four languages of Bislama, Lea faka-Tonga, Gagana Samoa, and Solomon Island Pijin. The survey is anonymous and is sent via email or smartphone. It can be</p>

	<p>made part of procurement from third party labour contractors and gives the brand owner oversight of condition in their supply chain but outside of their business.</p> <p>Five employers based in Hawke’s Bay used the tool to survey more than 2,500 RSE and other seasonal workers in two trials throughout 2019. Over 1,500 responses were received. All organisations that participated in the trial received positive responses, with overall scores of 75% or above. Results were consistent over both RSE and New Zealand seasonal workers, suggesting that employees were answering honestly. Due to the success of the pilot, NZAPI are encouraging all of the pipfruit industry to become involved. There is significant global interest in these pilots including GLOBALG.A.P. who have 18,000 members distributed across 135 countries.</p>
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### 5.5.2 Wider horticulture industry-led initiatives

Table 16 below highlights a number of collaborative horticulture-wide programmes that are currently being offered nationally. These projects are being monitored and will be evaluated so that changes can be made over time and to justify further funding where these programmes are proving effective.

**Table 16: Wider horticulture industry-led initiatives**

<b>Career Progression Manager Network</b>	<p>The Career Progression Manager Network is a collective effort across horticulture groups, district associations and growers (and has received financial support from the Provincial Growth Fund (PGF)).</p> <p>This network has been directly responsible for attracting 181 people into horticulture apprenticeships and has collectively been involved in arranging training for more than 800 people.</p>
<b>Horticulture Workforce Pathways</b>	<p>The horticulture industry acknowledges that career seekers and students need good information to guide their job and career choices and that sectors that can show there are clear pathways to interesting, varied and higher skilled and better earning roles are likely to have greater success in attracting and retaining talent. A number of horticulture sectors have created industry leaning and qualification pathway information for career seekers and school leavers at various levels with or without qualifications. These examples are provided in Annex 13 below.</p>
<b>GoHorticulture</b>	<p>The GoHorticulture (or GoHort) website went live in August and has the aim of attracting people to horticulture by showcasing careers and opportunities.</p> <p>In its first six weeks, nearly 4,000 people visited the site and 3,200 accessed the job board. This supplements the websites ‘Work the Seasons’ (which has a national reach with specific regional information and opportunities) and ‘Opportunity Grows Here’ (which is a MPI-led initiative).</p>
<b>Pick Tiki</b>	<p>Pick Tiki is a joint NZ Apples &amp; Pears and Horticulture NZ initiative and pilot programme created to enable senior secondary and tertiary students to meet seasonal labour demand by providing support and information linking to accommodation, transport and activities in each region. This initiative has been supported by a targeted marketing and social media campaign.</p>
<b>Horticulture immersion programmes</b>	<p>The Horticulture Immersion Programs (HIPs) are unique, experiential professional development programs that provide competitively selected group of exceptional university students, recent graduates, and executives who possess high leadership potential with a complete immersion into selected international (and since Covid-19 domestic) horticultural markets and exposure to the complete value chains supporting them.</p> <p>Collectively, the programs are:</p> <ul style="list-style-type: none"> <li>- Acting as an effective attraction mechanism of highly capably rangatahi</li> </ul>

	<ul style="list-style-type: none"> <li>- Establishing and activating a cohort of leaders who have the vision, insights, and drive to create, build and lead various initiatives to begin tackling some of the wicked problems faced by horticulture.</li> <li>- Leveraging the cohort to establish and catalyse excitement for students to explore and pursue horticulture as a career-focus.</li> </ul>
<b>Young Fruit Grower Competitions</b>	Horticulture NZ and the regional Fruit grower groups in conjunction with industry bodies and associated businesses (who help to sponsor the events) run young fruit grower competitions in the major growing regions of the country. The winners of these competitions go on to a national event and a national Young Fruit Grower is named for Horticulture. These events are highly regarded by industry and usefully support career development. Many of the emerging leaders across Horticulture and the Apple and Pear sector have come through the YOG network.
<b>Horticultural Societies at Massey and Lincoln Universities</b>	NZAPI and Hort NZ have been supporting and enabling the University Horticulture Societies over the last 5 years through sponsorship and facilitating different events and activities. There has been success in growing these to a point where they function well as conduits for engaging with career opportunities in horticulture.

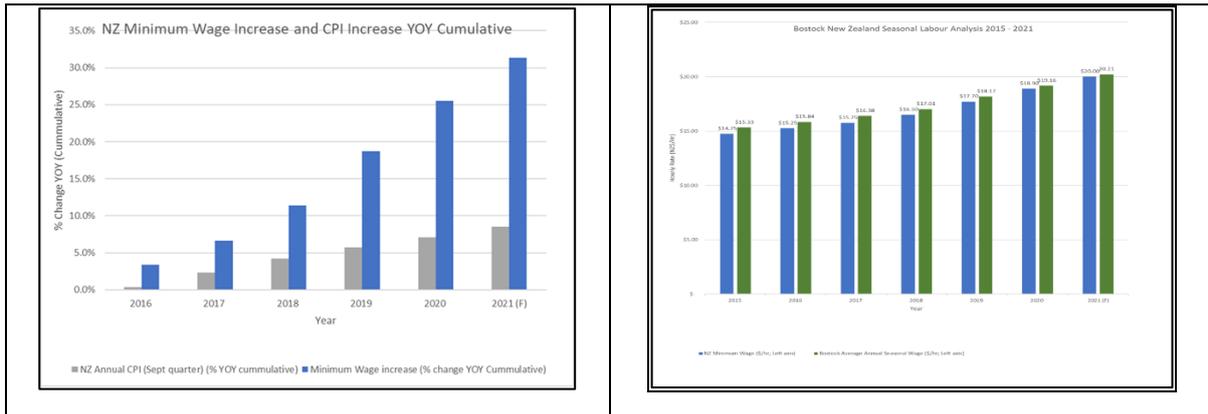
### 5.5.3 Pay-related considerations

Horticulture offers considerable opportunities and an effective entry point into the job market for a range of NZers with challenging circumstances. In taking on this responsibility horticulture employers undertake to provide:

- Considerable wrap-around support (pastoral care; wellbeing; and training) to keep new entrants engaged and employed; and
- An effective staircase (involving continuing training and support) through to valuable and well-paying permanent employment for starting seasonal roles and through to higher-earning permanent roles for those starting in permanent positions.

This support is necessary to support productivity and effective business and in exercising the role the industry wants to play in supporting communities to prosper. This support is also expensive and there is a key interplay between the numbers of people facing considerable challenge that the industry can offer roles to (and effectively support), and the starting wage.

The industry has not been resting idly on pay. In the past year wage rates have increased by around 18% in response to labour shortages. The graphs below also demonstrate how the minimum wage has gone up in the last 5 years compared to inflation (+30% cf 8%, which has translated into real wage growth). This has, and will continue to have, a positive effect by pushing wages up for all lower paid permanent workers given the need for relativity above the minimum wage.



From a business perspective the industry needs a new entrant and training pathway for young people to maximise the opportunities for as many NZers (particularly those facing considerable challenges) as possible. This means that while the industry is committed to establishing mechanisms to pay all of its permanent employees \$22.10 or above it needs an initial lower ‘on-ramp’ and staging (estimated at around 2 years) for horticulture apprentices / trainees. This is likely to be between the minimum wage and \$22.10.

It is also worth emphasising that seasonal work is a stepping stone to permanent roles. These roles provide workers with skills, resilience, and job mobility. With effective support and a few months of work and training there is often a transformation of a person’s productivity, self-esteem and discipline. These workers then move on to better roles and more training and higher paying permanent roles. Often the experience provides them with the confidence to move in to other industries and to start new careers. Hawke’s Bay RSE employers have changed the lives of hundreds of local people through a commitment and partnership with MSD to ensure we work hard to employ NZers first.

Apples & Pears RSE employers are committed to employing NZ workers in suitable seasonal roles and to staircase these workers into the permanent jobs that will be created from forecasted industry growth.

A piece rate is a commission where the employee is paid for the number of pieces they complete, for example, being paid for the number of bins of fruit picked, or the number of trees pruned or thinned. Employees paid per piece must still receive at least the relevant minimum wage for each hour worked.

Piece rates encourage productivity and reward workers for producing more, especially relative to hourly rates. Piece rates can have a large range of prices for the same basic job description. This is due to the variability of conditions on the orchard and the skill and physical requirements of the work. This can include (for picking as an example): heights of trees, size of fruit, colour of fruit, amount of fruit, maturity of fruit, size of bins to be filled.

Due to large workforces and the need to work to strict crop maturity and time constraints, piece rates are an extremely important payment model. Seasonal orchard tasks require unit completion based on the piece unit. It is more difficult to manage seasonal tasks using hourly pay rates as picks, trees, rows and bins need to be completed fully on time and in specification (and this underpins the quality differential between NZ export fruit and our competitors).

Experience is important and with it comes skills and knowledge that increase productivity and earnings. RSE employers employ a range of workers of different skills, fitness and capability. Often

these workers will be working in a team that provides social and personal support for the workers. Having lower productivity workers in a team is acceptable as the culture and companionship of all the workers is important. Topping these workers up if necessary is also part of accepted practice.

For less productive workers the minimum wage offers a safeguard. On the other end of the scale highly productive workers can earn very high hourly rates (e.g. experienced seasonal workers on piece rates are making very good money - +\$2,000/week). Earnings across a typical workforce show a normal distribution. There is therefore a balance between setting a piece rate that motivates workers, minimises any workers that may need to be topped up and allows highly productive workers to be suitably rewarded for their skills, experience and output. Setting a piece rate too low means workers will need to be topped up to the minimum wage. Setting it too high increases the costs significantly across the entire work group.

The industry understands the government would like to have more transparency on the distribution of seasonal rates across the sector and is keen to work with government so there is a clearer understanding of how piece rates are being used to reward skills and facilitate the transition to the labour market for lower productivity workers (i.e. the current model of setting piece rates, rewarding productive workers, and topping up lower productive workers where necessary means productivity does not need to be a major influencing factor for employment decisions).

## **5.6 Technology**

There has been, and continues to be, considerable investment in automation and new growing systems. These investments are already changing the nature of the labour market (at least for apples and pears where the growers are the employers of permanent and seasonal workers and therefore have a more direct interest in driving productivity improvements for their businesses).

While automation is leading to a loss of some jobs it is supporting the creation of new, higher value jobs and the ability for the sector to expand at faster rates. The overall industry-wide effect is a larger number of higher-paying roles.

### **5.6.1 Post-harvest is leading the way**

In the short to medium term, automation is most likely to be seen in post-harvest which is where one-third of harvest labour is required. Significant investment is being made by a number of post-harvest companies into R&D to support further innovation.

Over the past few years automation advancements in some facilities have enabled both an increase in productivity but also a reduction in labour needs.

These advancements will be rolled out over the coming years as R&D prototypes become commercially operating systems. This is extremely intensive capital investment that would be difficult to justify on a pure return on investment basis especially considering the equipment is only used for 25% of the year in many cases. However, the industry recognises the importance of reducing its reliance on seasonal labour particularly given the industry's growth potential and so it has been continuing to invest (at least pre-COVID and the associated border restrictions creating major labour supply issues and investment uncertainty for the sector). There is considerable opportunity to accelerate progress in this area through a partnership with government and Section 7 below explores what this could look like in more detail.

The type of systems common in post-harvest facilities include automated defect and colour graders and sizers, robotic tray fillers, stackers and palletisers. In a New Zealand first two Hawke's Bay packhouse will soon have multiple robotic forklifts complementing all the other automation systems. The days when the lights are turned off in the packhouse because no on-site workers are needed are not many years away. It is important to note that in these packhouses seasonal staff often move into permanent roles and are trained to operate the very expensive and sophisticated automation systems.

Currently there is no institutional training for these workplaces of the future. Industry-based vocational training through learning on the job is being provided by the industry and specific employers.

### **5.6.2 Innovation at the orchard level will create opportunities**

Horticulture is changing in ways which will benefit a wide range of New Zealand jobseekers. It is progressively adopting automation and technologies that make picking and packing more efficient permitting workers to increase their earnings.

Although these advancements are making a difference, it will take time for their full effect to become apparent. It is estimated that widespread adoption of labour automation technology at the orchard

level is still at least 15 to 20 years away (and that assumes a healthy and growing industry that can sustain the investment required).

In the apple industry, for example, dwarf tree plantings over the past 20 years have resulted in much less pruning and harvesting from ladders, and/or use of shorter lighter ladders. These plantings have also enabled the use of motorised platforms where one key objective is to attract a different workforce into the orchard. Fruit no longer needs to be carried; it is fed straight to a conveyor belt. These platforms provide for a more diverse range of employees that may not have the physical strength and endurance to harvest on ladders.

Orchard growing environments are highly variable and variability is the enemy of automation. Currently 13% or 1404ha of orchards are planted in what industry calls “Robot Ready” structures. Over the next 5 years the industry has modelled that it will grow by 19% to 12798ha (currently 10741ha) and that robot ready orchard area will expand to 35% or 4451ha of the planted area.

**Table 17: Orchard planting systems: Standard vs Robot Ready**

Year	Standard	Robot Ready	Total
2021	8892	1829	10721
2026	8347	4451	12798

It is important to note that there will still be 8347ha of older style planting systems that will need to be hand-picked. It is clear that this area will remain significant well past 2030.

Excluding the cost of the land the capital cost of developing this area of orchard in Robot Ready structures is \$900m. While industry has grown in profitability members are investing much of this back into their businesses.

The platforms do introduce additional costs, especially where the crop is uneven and the work is not evenly distributed across the platform and other factors such as terrain and row length can make platforms unfeasible. Again adoption of this technology will take time as typical orchard redevelopment occurs only every 25-30 years so not all plantings will be suitable for this technology (see Case Study 5 in Section 9).

Growers are also looking to invest in robot picking technology and to fund research to allow technological advancements within the industry e.g. the use of GPS tractor precision and UAV aerial mapping, mulching machinery and mechanical weeding machines.

T&G Global is working with Silicon-Valley based Abundant Robotics to work on the commercialisation of the world’s first robotic apple harvester. This counter-seasonality allows two seasons of development in one year. In 2018 and 2019, the robot was in the Hawke’s Bay, with teams working through equipment requirements and the tailoring of tree canopies. 2020 was to be the robot’s first commercial test, however given COVID-19 and border closures, US based experts were unable to do this.

It is worth noting that there are still considerable difficulties to work through in regard to robotic harvesting in real world conditions (e.g. variability in light/shading, foreground and background colour of apples, crop moisture/dew/wetness, different varieties with different characteristics, uneven ground in orchards, stem pull and bruising etc). This will take time, effort, and considerable investment

to work through. This technology also needs to be economically viable e.g. current prototype robots cost around half a million dollars and they pick less than 1 experienced seasonal worker (while damaging fruit in the process). This will require high productivity orchards and a healthy and growing industry.

### 5.6.3 Investment in technology

Table 18 below captures the investment in technology and automation that has occurred in the apples and pears sector since 2015 and the estimates impact on staff numbers and productivity.

The following points can be made:

- The bulk of investment has gone into the development of 2D or ‘robot ready’ orchards. Note, the investment data in the table does not include investment in new orchards that are not 2D or redevelopment of existing orchards into new and better performing varieties (which will have a positive future impact on industry returns).
- The scale of the investment relative to the size of the industry is significant.
- Most of the investment in technology and automation is related to packhouses at this point. This is because the technology is more mature, is becoming cost-effective, and packing processes can be re-configured more quickly than re-developing and re-planting whole orchards. These investments includes defects graders, autofillers, palletisers, robotic stackers, barcode readers, and robotic forklifts.
- Investment in technology to assist picking has, however, started and this is expected to ramp up as more ‘robot-ready’ orchards begin producing fruit.

**Table 18: Investment in technology, automation and ‘robot-ready’ orchards**

	Investment between 2015-2020	Average annual investment	Impact on labour	Impact on labour (qualitative/comment)	Impact on productivity
<b>Orchard - 2D ‘robot-ready’ growing systems</b>	\$280m	\$56m	In the first 3 years up to 6 times more staff are needed to ‘train’ the system	For year 4 about the same amount of staff will be needed as a traditional growing system but nearly twice as much volume will be produced	2-D growing systems will be nearly twice as productive as traditional growing systems
<b>Orchard – platforms for picking</b>	\$10.5m (62 units)	\$2.8m	Too early to measure with accuracy	This technology doesn’t necessarily reduce labour needs it rather allows a wider range of people to do the job more easily	Picking platforms may not increase productivity but will change the nature of picking and thinning roles
<b>Post-harvest / packhouse technology and/or automation</b>	\$178.3m	\$34.7m	14% reduction in staff numbers.  An average fall of 2.8% per year.	Investment in technology has allowed staff to be re-deployed to other areas of the packhouse	Increase of 39% (based on Tray Carton Equivalents per hour).  An average 7.8% increase per year.

## 6.0 FUTURE STATE: WHAT A SUCCESSFUL NATIONAL APPLES & PEARS AND HAWKE’S BAY HORTICULTURE SECTOR COULD LOOK LIKE

### 6.1 Production and export

As outlined earlier apples and pears sector business as usual modelling suggests the NZ apple and pear industry will grow by over 100% between 2021 and 2030, meaning the sector would be worth around \$2 billion to the NZ economy by 2030

NZ, Hawke’s Bay and other horticultural regions have a developed a clear comparative advantage in the horticultural products that we export (reflected in the premium we receive for our products on export markets). This has involved the development of world-leading intellectual property in plant varieties and the systems that support market access and ensuring the highest quality product reaches international customers. This work is also supported by an increasingly sophisticated eco-system of suppliers along the value and supply chain (which is reflected in NZ’s Agritech Industry Transformation Plan).

The key point is we don’t need to look for this economic ‘unicorn’; it’s hiding in plain sight. The opportunity presenting for NZ is to enable this growth in a way that leverages the considerable capabilities we have built over successive decades (so we stay ahead of our competitors); and in a way that responds to, and resolves over time, the labour market challenges the sector is facing.

**Table 19: Projected national industry growth**

Total NZ	2021	2022	2023	2024	2030
Area (ha)	11,212	11,605	12,011	12,431	15,281
Gross (MT)	683,957	713,698	744,683	776,963	1,000,930
Export (MT)	444,572	463,904	484,044	505,026	650,604

**Table 20: Projected Hawke's Bay industry growth**

Total NZ	2021	2022	2023	2024	2030
Area (ha)	6,985	7,230	7,483	7,745	9,520
Gross (MT)	417,730	432,351	447,483	463,145	569,324
Export (MT)	272,778	282,325	292,207	302,434	371,768

## 6.2 Labour market

A critical consideration of this Plan is how to change the trajectory of labour demand and supply over time so that the horticulture sector is less reliant on seasonal migrant labour and the sector is employing a greater proportion of NZers in more highly-skilled roles.

This section forecasts future labour demand based on current permanent and seasonal labour needs relative to planted area and production data (see the discussion in Section 5 and the coefficients provided in Annex 11). It then forecasts future labour demand based on current estimates of the likely impact of technology and automation on the apples and pears sector workforce (and this could be the subject of further testing in due course). Note: These figures do not include the creation of support industry jobs outside of orchard gates, packhouses, and head offices.

### 6.2.1 Forecasts based on current needs relative to planted area and production

Tables 21-24 below capture the estimated number of permanent and seasonal roles by type and place of work based on current permanent and seasonal labour needs relative to planted area and production data (i.e. they do not take into account the impact of technology on the workforce between now and 2030).

These forecasts suggest that apples and pears sector growth between 2021 and 2030 will create:

- 1706 more permanent jobs and 6061 more seasonal jobs across NZ by 2030;
- 918 more permanent jobs and 2913 more seasonal roles in Hawke’s Bay by 2030.

**Table 21: Forecast for permanent workers across NZ**

	2021	2022	2023	2024	2030
Orchard	1,906	1,973	2,042	2,113	2,598
Packhouse	1,614	1,684	1,757	1,834	2,362
Corporate	650	675	701	728	916
Total	4,170	4,332	4,501	4,675	5,876
Cumulative		162	331	505	1706

**Table 22: Forecast for permanent workers in Hawke’s Bay**

	2021	2022	2023	2024	2030
Orchard	1188	1229	1272	1317	1618
Packhouse	986	1020	1056	1093	1344
Corporate	403	416	429	442	533
Total	2577	2665	2757	2852	3495
Cumulative increase		88	180	275	918

**Table 23: Forecast seasonal labour demand across NZ**

Task	2021	2022	2023	2024	2030
Picking	9230	9632	10050	10485	13508
Thinning	6229	6447	6673	6906	8490
Pruning	2437	2523	2611	2702	3322
Packing	4351	4519	4694	4876	6135
Picking + Packing	13581	14151	14744	15362	19642
Increase Picking + Packing		570	1163	1781	6061

**Table 24: Forecast seasonal labour demand in Hawke's Bay**

Task	2021	2022	2023	2024	2030
Picking	5637	5835	6039	6250	7683
Thinning	3881	4017	4157	4303	5289
Pruning	1519	1572	1627	1684	2070
Packing	2701	2785	2872	2961	3568
Picking + Packing	8338	8619	8910	9212	11251
Increase Picking + Packing		281	572	874	2913

### 6.2.1 Forecasts taking into account the impact of technology and automation

NZ apples and pears industry members were asked as part of developing this Plan to provide data on the level of actual and estimated investment in technology and automation over the last 5 years and through to 2030. They were also asked to provide quantitative and qualitative information on the impact this investment had had, or was likely to have, on their workforce.

This information has been used to estimate the likely impact of technology and automation on the workforce between now and 2030 (Annex X provides more information on the assumptions underpinning the coefficients used to estimate the workforce numbers).

Industry estimates suggest a healthy pace of future investment in technology, but this is predicated on the availability of labour.

Table 25 below breaks the investment down by orchard and post-harvest/packhouse.

For post-harvest, investment in new technologies, packing systems, and packhouses is estimated at around \$281m across the apples and pears industry. This is expected to reduce staff numbers by around 19% and support a 36% increase in productivity (based on throughput of bins per hour).

For orchards, investment in new 2D growing systems is estimated at around \$802.2m over the next 5 years across the apples and pears sector. At this stage it is very hard to predict and forecast the impact of new growing systems on labour needs but the analysis assumes that 20% productivity growth will be possible based on 2D systems being easier to pick, less time needed on ladders etc. A critical point to make, however, is that these systems, alongside new technology like picking platforms, will change

the nature of roles (e.g. make them much less physically demanding). This will open up opportunities for a much wider range of people who are currently just not fit enough to undertake physical ladder work.

**Table 25: Estimated industry investment through to 2030 and impact on labour and productivity**

	Investment between 2020-2030	Average annual investment	Impact on labour	Impact on productivity
Orchard - 2D 'robot-ready' growing systems	\$802.2m (By 2026)	\$160m	Initially more labour is needed but 2D systems and picking platforms change the nature of roles and provide an opportunity for a wider range of people to participate	Our analysis assumes 20% productivity growth based on the 2D systems being easier to pick, less time spent on ladders etc
Orchard – platforms for picking	\$19.4m	\$1.94m		
Post-harvest / packhouse technology and/or automation	\$281m	\$28.1m	19% reduction in staff numbers.  An average fall of 1.9% per year.	Increase of 36%.  An average 3.6% increase per year.
Head office / corporate services			Our analysis assumes a 50% increase in highly-skilled roles to support the global commercialisation of NZ-owned IP (new varieties, cultivars etc).	

Tables 26-29 below capture the estimated number of permanent and seasonal roles by type and place of work when the impact of technology and automation is taken into account.

Note, forecasting the impact of technology on the workforce is an imprecise science and this is an area of work that should form part of an ongoing partnership between industry and government.

Nevertheless, these forecasts suggest that apples and pears sector growth between 2021 and 2030, and the associated investment in technology and automation, will create:

- 2672 more permanent jobs and 5227 more seasonal jobs (at peak harvest) across NZ by 2030. **This is 57% more permanent roles and 14% less seasonal roles (at peak harvest) than when the impact of technology and automation is not taken into account.**
- 1455 more permanent jobs and 2360 more seasonal roles in Hawke’s Bay by 2030. **This is 58% more permanent roles and 19% less seasonal roles than when the impact of technology and automation is not taken into account.**

A critical point to highlight here is that the growth in permanent roles is much larger than the increase in seasonal roles and as a proportion of the workforce seasonal roles will continue to fall with the support of technological change. Seasonal roles will always be required for some tasks but the nature of those roles will also change quite markedly over time (e.g. a wider range of people will be about to do less physically-demanding work).

Another key observation is that the ongoing international commercialisation of the NZ apples and pears sector will support a large increase in the highly-skilled roles required to support this work e.g. in intellectual property management, marketing, supply-chain optimisation, bio/plant-tech etc.

**Table 26: Forecast for permanent workers across NZ**

	2021	2022	2023	2024	2030
Orchard	1,906	1973	2042	2113	2598
Packhouse	1,614	1684	1757	1834	2362
Corporate	650	1005	1165	1338	1882
Total	4,170	4662	4965	5285	6842
Cumulative		492	795	1115	2672

**Table 27: Forecast for permanent workers in Hawke's Bay**

	2021	2022	2023	2024	2030
Orchard	1188	1229	1272	1317	1618
Packhouse	986	1020	1056	1093	1344
Corporate	403	609	700	798	1070
Total	2577	2858	3028	3207	4032
Cumulative increase		281	451	630	1455

**Table 28: Forecast seasonal labour demand across NZ**

Task	2021	2022	2023	2024	2030
Picking	9230	9527	9788	10015	12603
Thinning	6229	6370	6483	6568	7872
Pruning	2437	2496	2545	2584	3105
Packing	4351	5492	5304	5151	6204
Picking + Packing	13581	15019	15092	15165	18808
Increase Picking + Packing		1438	1511	1584	5227

**Table 29: Forecast seasonal labour demand in Hawke's Bay**

Task	2021	2022	2023	2024	2030
Picking	5637	5771	5882	5970	7169
Thinning	3881	3969	4039	4092	4904
Pruning	1519	1555	1585	1610	1934
Packing	2701	3327	3187	3070	3529
Picking + Packing	8338	9098	9069	9040	10698
Increase Picking + Packing		760	731	702	2360

## 6.2.2 Changing skill mix of roles

The apples and pears sector has worked closely with its members over the last few years to map out and understand the skill level requirements across production, post-harvest and head office roles and the percentage of workers in these roles. Section 5 (Table 10) provided a picture of what this currently looks like for the national apples and pears sector.

We use the insights developed in Section 6.2.1. above to provide a view of skill level requirements and the likely proportion of the workforce at different skill levels in 2030.

Table 30 below captures how the skill level requirements and workforce composition is expected to shift over time.

The following points can be made:

- The trajectory of the national apples and pears industry is toward a more highly-skilled workforce. This is supported heavily by the ongoing global commercialisation of NZ-owned intellectual property and know-how and technological development and adoption.
- Changing the composition of an industry's workforce takes times. This is a multi-decadal process which can only be supported and sustained by supportive balance sheets and regulatory settings.
- The industry has identified that the NZ training system will need to be adaptable and flexible to respond to the changing skill needs of the sector. Industry attraction efforts will need to capture the attention of highly-skilled people who will have a range of career choices available to them.
- The NZ training and immigration systems will need to be fit-for-purpose in order to capture the full gains of this transition and transformation process.

**Table 30: Qualification levels and roles in 2030**

Level	Qualification level	% of Production workforce (2019)	% of Production workforce (2030)	% of Post-Harvest workforce (2019)	% of Post-Harvest workforce (2030)
Senior Executive	Level 6-10	0.99%	1%	1.41%	2%
Senior Manager	Level 6-7	4.95%	6%	2.82%	4%
Manager	Level 4-6	4.95%	6%	8.45%	10%
Assistant Manager	Level 4-5	7.92%	9%	8.45%	10%
Senior Worker	Level 4	27.72%	29%	22.54%	24%
Worker	Level 3	53.47%	49%	56.34%	50%

## 7.0 WHAT IS REQUIRED TO SUPPORT A SUCCESSFUL TRANSITION

Sections 5 and 6 of this Plan provide a view of the gap between where the industry is now and where the industry and government would like it to be.

The transition between these two states will require more than a focus on working conditions and pay (which has absorbed much of the public debate to date). While the industry is focused on efforts to improve pay and other conditions (e.g. transport, flexible hours, meals, and provision and access to accommodation), evidence from the significant mobilisation of industry and government resources to attract NZers to horticulture roles over the last 12 months has provided strong evidence that it is not only these factors that are constraining the uptake of available roles by NZers.

A successful transition will require a long-term partnership between industry and government that is focused on four key elements:

1. Attraction and retention of NZers (which will remain an ongoing industry-led priority);
2. Training of NZers (which will require a fit-for-purpose system that is currently being built);
3. Access to RSE and other migrant workers (who will be needed for some time for peak season activities); and
4. Innovation and investment to support the transition to business and growing models that rely on less manual, and more higher-skilled, labour.

Section 7.1 below explores how a focussed innovation policy could support the development and adoption of new technology and best practice that is required to transition business and growing models.

Section 7.2 below explores the role of industry, government and regional partnerships that will be required to support the focus areas highlighted above. This highlights the need for an effective governance framework that helps prioritise, coordinate and align activity so that effective progress is made over time.

### 7.1 Focused innovation policy

The New Zealand Productivity Commission (NZPC) report (and associated inquiry) “New Zealand firms: reaching for the frontier, 2020”, makes a number of important points about the role of, and benefits that can be achieved, through focused innovation policy. This is relevant for the industry-led, government-enabled partnership that will be required to meet the joint industry and government vision of a successful Hawke’s Bay horticulture and national apple and pears sector (see Section 2).

Table 31 below captures the main points from Chapter 7 (‘Focused innovation policy’) of the NZPC report and links the finding to the suggested recommendations and actions contained in this Industry Transformation Plan.

The key high-level points that can be taken from this are:

- NZ, Hawke’s Bay and other horticultural regions have developed a clear comparative advantage in horticultural products that we export. This has involved the development of world-leading intellectual property in plant varieties and a sophisticated eco-system of suppliers along the value and supply chain. We don’t need to search to understand that we are good at horticulture and

there is a real opportunity to bring real innovation focus and resources to bear to leverage the opportunities and overcome the challenges facing horticulture.

- There is considerable potential to support innovation in agritech as this is an area of potential export strength and an area which is critical in maintaining and enhancing NZ's comparative advantage in horticulture.
- There is an opportunity to create a horticulture-specific, mission-oriented policy that helps to support our growing agritech capabilities and address critical labour market challenges and achieve environmental objectives.
- This Plan sees a role for a long-term partnership between industry and government (with an associated and appropriate governance framework) that explores - emerging possibilities for innovation; and the priority areas for collaboration and complementary investment that help to accelerate horticulture-related technological development and adoption.
- The industry-led, government-enabled partnership which underpins this Plan will require scale, resources and durability to be successful and has been built on the basis of shared design and governance.

**Table 31: Key points from Chapter 7 of NZPC report**

KEY POINTS	LINK TO THIS WORKFORCE TRANSITION PLAN
<p>Small advanced economies (SAEs) like New Zealand develop by finding new areas of specialised production that give firms a competitive advantage in international markets.</p> <p><b>Firms find these new areas by building on existing capabilities in their innovation ecosystems that make successful and impactful innovation more likely.</b></p> <p>With scope for only a limited number of specialisations in a small economy, governments of SAEs can assist by bringing public resources to bear in areas of promise.</p>	<ul style="list-style-type: none"> <li>• NZ, Hawke's Bay and other horticultural regions have a developed a clear comparative advantage in horticultural products that we export.</li> <li>• This has involved the development of world-leading intellectual property in plant varieties and a sophisticated eco-system of suppliers along the value and supply chain.</li> <li>• The key point we don't need to search to understand that we are good at horticulture and there is a real opportunity to bring real focus and resources to bear to leverage the opportunities and overcome the challenges.</li> </ul>
<p>Governments in most SAEs <b>focus some support for innovation in areas of potential export strength.</b></p> <p>These could, for instance, be technologies spanning more than one industry, diverse technologies serving specific industries, or innovation in linked upstream and downstream industries.</p> <p><b>To focus support, these governments create platforms of research, and make associated investments in skills and the national science system. They also help build links between firms and researchers.</b></p>	<ul style="list-style-type: none"> <li>• There is considerable potential to support innovation in agritech as this is an area of potential export strength and an area which is critical in maintaining and enhancing NZ's comparative advantage in horticulture.</li> </ul>
<p>Governments employ such focused innovation policies with a variety of objectives that sometimes overlap.</p>	<ul style="list-style-type: none"> <li>• There is an opportunity to create a horticulture-specific, mission-oriented policy that helps to support</li> </ul>

<p><b>Mission-oriented policies address societal challenges such as those arising from climate change, technological disruption and social inequality.</b></p> <p><b>Focused innovation policies to enhance productivity will only be durable if they are also consistent with environmental and social objectives.</b></p>	<p>our growing agritech capabilities <u>and</u> address critical labour market challenges and achieve environmental objectives.</p>
<p>Governments can <b>employ adaptive processes to elicit information from firms and other economic actors about emerging possibilities for innovation, in chosen areas.</b></p> <p>Through such processes, stakeholders can identify ways of collaborating and making complementary investments that will get the ball rolling faster and overcome bottlenecks and barriers.</p>	<ul style="list-style-type: none"> <li>• This Plan sees a role for a long-term partnership between industry and government (with an associated and appropriate governance framework) that explores:</li> <li>• Emerging possibilities for innovation</li> <li>• The priority areas for collaboration and complementary investment that help to accelerate horticulture-related technological development and adoption.</li> </ul>
<p><b>Focused innovation strategies require effective governance, implementation, monitoring and evaluation, and sometimes new institutions, if they are to succeed.</b></p>	<ul style="list-style-type: none"> <li>• This is a suggested action of this Plan.</li> </ul>
<p><b>New Zealand’s past and present attempts at focused innovation policy have lacked enough scale, resources and durability to be effective.</b></p> <p>They have also tended to arise out of government-driven processes, whereas <b>shared design and governance with multiple stakeholders would likely generate greater momentum and make better use of dispersed knowledge and capabilities.</b></p> <p>International examples demonstrate how governance of well-resourced initiatives can be devolved to independent multiple-stakeholder entities. The Government should take stock of its current approach and draw lessons from New Zealand and international experience.</p>	<ul style="list-style-type: none"> <li>• See comments above.</li> <li>• The industry-led, government-enabled partnership which is underpins this Plan will require scale, resources and durability to be successful.</li> <li>• This partnership has been built on the basis of shared design and governance.</li> </ul>

## 7.2 Roles of industry and government

Section 5, which captures the current state of Hawke’s Bay horticulture and the national apples and pears sector, highlights the breadth of industry-led activity focused on workforce attraction, retention, training and investment in new technology.

Many of the areas that are showing most promise have been government-enabled through funding and there has been a very positive evolution of the working level relationship between industry and government over the last 5 or so years. This evolution has shifted the focus from government leading programmes to the industry leading programmes with support from government funding.

The industry would like to build on this strong foundation and proposes a long-term industry-led, government-enabled partnership be formalised to underpin, guide and implement this Plan. The partnership would draw from the strengths and appropriate roles of the partners and will require shared design and governance and appropriate resourcing and durability to be successful.

This partnership would include Iwi/hapū as mana whenua and Treaty Partners but also increasingly significant horticultural investors (see Section 5.2.3 above), and Local Government who has key roles as a local regulator and the ability to bring stakeholders together from across a range of interests to collaborate on shared regional challenges and opportunities.

Table 32 below captures the key roles of each of the proposed partners and the focus of the activity required to support a successful long-term partnership.

**Table 32: Proposed industry-led/government-enabled partnership**

Partners	Roles	Focus of activity
<b>Industry</b>	<ul style="list-style-type: none"> <li>Employers</li> <li>Investors</li> </ul>	<ul style="list-style-type: none"> <li>Workforce attraction, retention and training</li> <li>Job creation</li> <li>Investment in technology</li> </ul>
<b>Iwi/hapū</b>	<ul style="list-style-type: none"> <li>Mana whenua</li> <li>Treaty partner</li> <li>Investor</li> </ul>	<ul style="list-style-type: none"> <li>Workforce attraction, retention and training</li> <li>Job creation</li> <li>Investment in technology</li> <li>Pastoral care</li> </ul>
<b>Central Government</b>	<ul style="list-style-type: none"> <li>Regulator</li> <li>Funder/investor</li> </ul>	<ul style="list-style-type: none"> <li>RSE policy support</li> <li>Broader immigration settings</li> <li>Funding for education and training</li> <li>Focused and supportive innovation policy</li> </ul>
<b>Local Government</b>	<ul style="list-style-type: none"> <li>Local regulator</li> <li>Local leadership and coordination</li> </ul>	<ul style="list-style-type: none"> <li>Pastoral care</li> <li>Attraction and retention support</li> <li>Regional representation and coordination</li> </ul>

The proposed long-term industry-led, government-enabled partnership will require an effective (and appropriately resourced), mechanism or governance framework that brings the partners together regularly to prioritise, coordinate, align and implement the actions and activity.

This mechanism could utilise existing governance and/or relevant working groups or a new structure could be developed. To be effective in supporting national and regional economic development efforts and shared workforce objectives, the mechanism would need to have close links to (and perhaps regularly report into), Regional Skills Leadership Groups (RSLGs), and regional development governance and discussions (e.g. Hawke’s Bay’s Matariki Regional Development Strategy). The

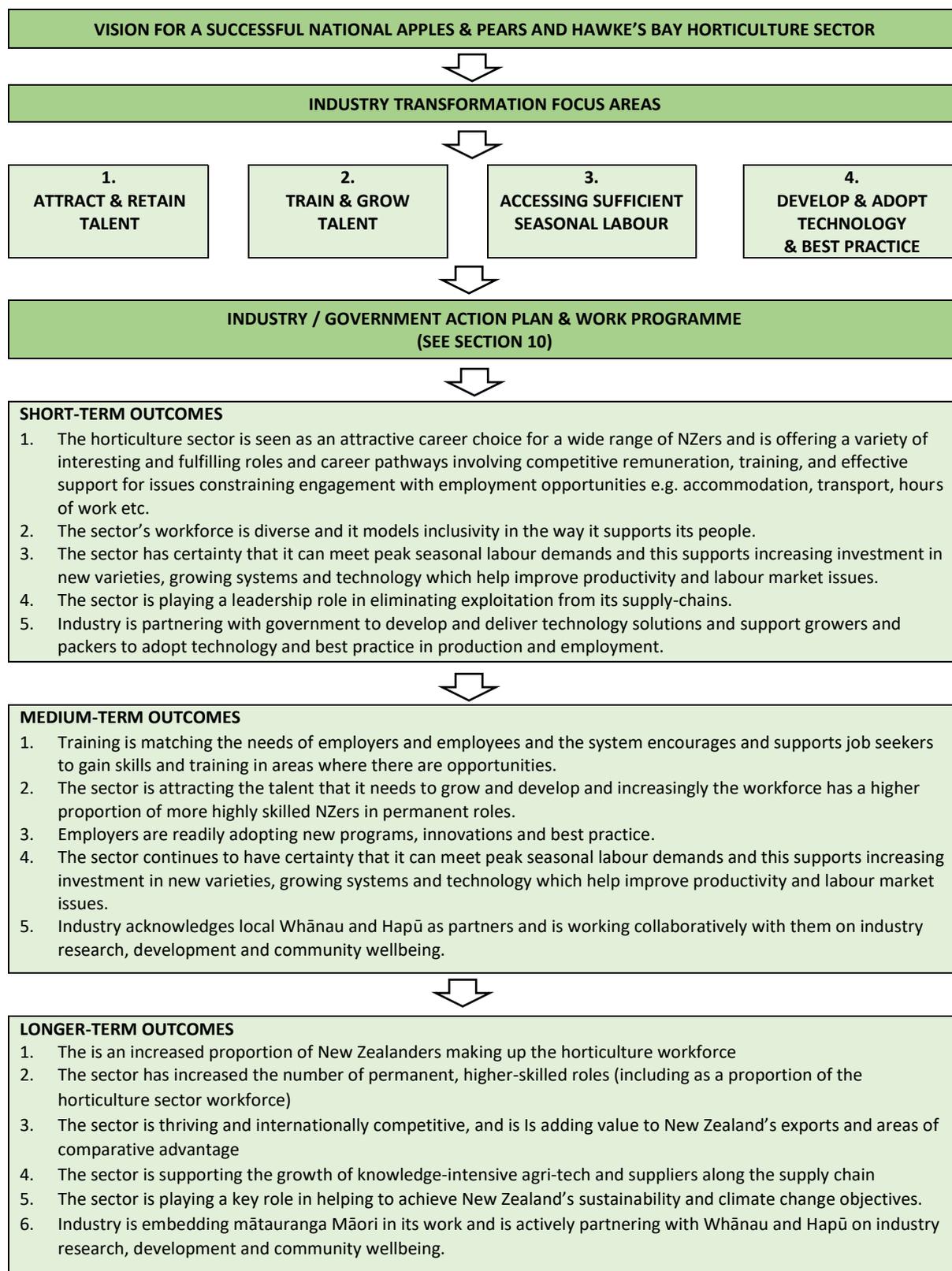
industry would like to co-design what this mechanism/governance structure could look like with its Iwi, and Central and Local Government partners. This can be done once Central Government agrees to partner on this ITP.

The industry acknowledges that whatever structure is chosen it must fulfil the following objectives if it is going to effectively support the work that is required over the long-term:

- Have a clear purpose and stay focused on it;
- Have clear roles and responsibilities so everyone understands how they fit in and the role they need to play (governance vs management; team work vs organisation/agency views);
- Lead by setting a constructive tone;
- Involve the right people;
- Invest in effective relationships built on trust and respect;
- Be clear about accountabilities and be transparent about performance against them;
- Be appropriately resourced.

Section 8 below provides a draft output and outcome framework that could be used by the mechanism/governance structure that is established to guide and implement this Plan. The industry would like to co-design the measurement of the short-term, medium-term and long-term outcomes with Iwi, and Central and Local Government partners so this output and outcome framework can be used to for effective monitoring and evaluation.

## 8.0 HORTICULTURE INDUSTRY TRANSFORMATION PLAN – OUTPUT/OUTCOME FRAMEWORK



## 9.0 CASE STUDIES

### CASE STUDY 1: A CURRENT ATTRACTION INITIATIVE: PICK TIKI

Pick Tiki is a programme that has recently been developed by the horticulture industry to mobilize Kiwi students who are able and willing to work over the summer harvest period.

Pick Tiki seeks to provide more transparency over what the seasonal work experience will involve by ensuring all jobs meet a standardized set of criteria (minimum pay, hours available, availability of accommodation and transport) and provision of wrap-around support. Lack of transparency over pay and work conditions has been identified as one of the main barrier's to students participating in seasonal work.

This initiative was supported by a targeted marketing and social media campaign. This was undertaken in collaboration with partners such as MPI's Opportunity Grows Here campaign, Student Job Search, and GoHort (which focuses on 'a summer adventure working with your mates', which was the result of focus groups with students asking what would get them excited to do seasonal work).

The Pick Tiki Facebook acted as a landing site and hub for the program. A 24h helpline was available and students who were offered a job were able to join the Pick Tiki community group where they could access resources, share their experiences, link with others in their area, obtain access to exclusive Pick Tiki deals and activities.

The industry estimates that this initiative translated into the placement of around 1,000 students in roles across NZ.



### CASE STUDY 2: GOHORT LEARNING PATHWAYS: A MICRO-CREDENTIAL TASTER PROGRAMME

The Learning Pathways initiative is a series of free online horticulture taster courses designed for those thinking about a fresh start in a new horticulture career.

If a person is interested in particular areas of horticulture and wants to demonstrate this commitment to a current or future employer they can complete a 'learning pathway'.

Each learning pathway consists of three courses which focus on a particular area of interest. When all courses in a pathway are successfully completed the person receives a 'Pathway badge'. This badge demonstrates their in-depth understanding of specific areas and their commitment to the horticulture industry. Digital badges provide employers with confidence that the learner is ready for a job in their company.



# Horticulture Career Progression Managers

## Te Ara Mahi

### WHO WE ARE

A network of six managers working across New Zealand to increase the number of people pursuing careers in horticulture, so the industry can continue to grow and prosper.

Our locations



### HOW WE WORK

Our chief role is to link work ready people with horticulture employers, by acting as the interface between people, our industry, schools and tertiary education and training providers, and government agencies.

#### We promote horticulture careers

by getting young people at secondary school or people already in the workforce to see potential in our diverse and vibrant industry.

**We help young people decide** on the training that is right for them and work out their training pathway.

**We help young people find** the right employer for them – employers who can offer on-job training and career mentoring.

**We work with employers**, helping them anticipate and meet skill needs, and provide them with work ready people.

**We work with schools and tertiary education and training providers** so that they meet our industry's needs by staying up to date with requirements.



### WHAT WE WILL ACHIEVE

The right people for the right job – a work force with the right training and attitude, advancing their horticulture careers and our industry.

#### **CASE STUDY 4: PIPFRUIT INDUSTRY TRAINING PROGRAMME: LEVELS 2-5**

NZAPI, EIT, PrITO and the TEC have agreed to work together to design a best practice industry training programme for the Pipfruit sector.

This programme will incorporate Fruit Production and Post-Harvest training from Levels 2-5 and will be a blended model based on the best aspects of the current programmes being offered along with innovative models being delivered internationally.

The aim is to embed strong pastoral support, the principle of kaitiakitanga and strong industry engagement into the programme. The project will give effect to the current RoVE work and the goals of the MPI skills action plan. It is intended to be used as a template for future projects which will be undertaken by other Primary Industry sector groups as the CoVE concepts come to fruition in coming months.

Immediate work may include:

- A scoping project to fully understand fully what is being delivered nationally, including the organisations that are delivering programmes of study for the Pipfruit sector; the qualifications they are delivering; and student numbers over the last 2 years.
- Greater understanding of what industry and students feel is best practice and what key skills should be included within the programmes at the various levels. This work should be done from a regional perspective and drawn together to form a national view.
- Exploration of innovative delivery methods (including those used internationally) that could be used (or first trialled) for this new model and how this could fit with stakeholders, NZQA and the new NZIST structure.

Recommendations at this point of the work include:

- Utilise pre-employment and L2 programmes from best-fit programmes in consultation with providers and industry, Iwi, and wider community.
- At L3 and L4 consider the EIT trainee model under EFT funding with ITO pastoral support in a shared funding model and managed apprenticeship format. This programme would also utilise and further develop the L3 and L4 Post Harvest offering, this would be developed further collaboratively based off the ITO model in Nelson and the format of the L5 Diploma which has been evolved into a fit for purpose programme of study by both organisations over the last 2 years.
- At L5 Diploma, offer both the Post-Harvest and Fruit Production programmes and develop the generic modules/areas so that there can be scale across the programme.
- For all of the offerings from L3-5 develop blended delivery options made up of online preloading of information, on job attestation and RPL options, face to face workshops and theory days that would be a mix of streaming and actual classroom and on-site delivery, dependent on topic and region. Industry extension and education workshops would in time be aligned with programme outcomes and would, with digital badge validation, be folded into the qualification outcomes. Several modules are already developed which will enable some evaluation and mapping of this initiative.

The recommendation is to offer these programmes in the following regions progressively from 2021.

- Hawkes Bay
- Gisborne
- Nelson
- Central Otago (which does not at present offer these programmes in a comparative way to the other regions so will require some additional consultation and support).

Additional areas of investigation are the programmes being offered internationally, particularly in The Netherlands and Belgium. This could lead to:

- Options around a possible Associate Degree programme at Level 4-5.
- Options around provision of internships.
- Options around provider and employer development programmes.
- Further insight into best-practice curriculum and programme structures.

#### CASE STUDY 5: USE OF TECHNOLOGY ON ORCHARD

Bostock New Zealand invested \$600,000 in 4 platform apple picking machines this season to enable more people to pick apples, including more women and elderly people who wouldn't ordinarily be able to pick apples, due to the physicalness of the work.

This innovation was good in theory, however, in practice the company found that the technology did not perform as anticipated as it takes time to set up the orchard tree structure for this technology to work effectively. The apple trees need to be grown to enable the platforms to move freely through the trees without causing any damage.

Bostock New Zealand will be altering its planting plans this winter – spacing the trees closer together, to cater for platform picking technology. With 5 percent re-development each year it will take 20 years to transform the entire operation.

#### Meet Wendy

Wendy is a 60 plus year old woman who is a nurse and wanted to pick apples this season. However she was challenged by the physical nature of the work. The platforms, meant that she could still pick apples. Instead of losing Wendy, Bostock New Zealand was able to keep her on through the harvest.



#### **CASE STUDY 6: USE OF TECHNOLOGY FOR PICKING**

In 2019 Hawke's Bay was the location for a trial of a robotic apple picker, harvesting New Zealand-developed Jazz™ and Envy™ Apple cultivars. The technology was developed in a partnership between T&G Global and US-based technology partner Abundant Robotics following a proof-of-concept prototype in 2015. The trial highlighted a number of issues that would need to be solved before this technology could be used in commercially but was a clear expression of the willingness of the industry to be at the forefront of technological development.

Unfortunately this case study demonstrates how difficult the fruit picking automation environment is. Abundant Robotics has ceased research and is being liquidated.



#### **CASE STUDY 7: USE OF TECHNOLOGY FOR PACKING**

The Robotics Plus Aporo Apple Packer (RPAP) achieves a high speed throughput of 120 apples per minute, twice as fast as a human. The RPAP places the apples the correct orientation, with all of the stems lying horizontal in the trays and be pointing in the same direction, all while having the colour side of the apple facing up for optimum presentation. This is only the first part of the challenge. The bigger problem is dealing with the large amount of variability presented by the apples. There is a wide range of apple varieties, sizes, shapes, colours, blemishes, etc. and this system needs to distinguish the apples features regardless of diversity.



## 10.0 ANNEX: NATIONAL APPLES & PEARS AND HAWKE'S BAY HORTICULTURE INDUSTRY TRANSFORMATION PLAN

Table 33: Industry Transformation Plan

#	KEY FOCUS AREAS AND RELATED ACTIONS	RESPONSIBILITY: LEAD/SUPPORT	TIMEFRAME ST = 0-3 years MT = 3-5 years LT = 5+ years	Measuring and tracking the action	What do we want to see if we're being successful
1.	ATTRACT AND RETAIN TALENT				
1.1.	As part of a multi-year strategic partnership the Apples & Pears industry is willing to commit to creating 1250 new permanent jobs by 2030	Business	MT	<ul style="list-style-type: none"> <li>Individual Workforce Development Plans at employer level. NZAPI will compile, aggregate and report this information.</li> </ul>	<ul style="list-style-type: none"> <li>New permanent positions being created</li> </ul>
1.2	Develop individual employer 'Workforce Development Plans' to guide and support workforce attraction, capability and training and managing and improving conditions of work	Business/ Industry	ST	<ul style="list-style-type: none"> <li>Individual Workforce Development Plans at employer level. NZAPI will compile, aggregate, and report this information.</li> <li>Industry will commit to 50% completion by end 2022</li> </ul>	<ul style="list-style-type: none"> <li>Every employer has an Individual Workforce Development Plan in place</li> <li>Success will be 90% commitment by 2025</li> </ul>
1.3	Continue to invest in worker accommodation to reduce reliance on urban accommodation and make this available for emergency and transitional housing needs when not needed by horticulture workers	Business	ST - LT	<ul style="list-style-type: none"> <li>Individual Workforce Development Plans at employer level. NZAPI will compile, aggregate, and report this information.</li> </ul>	<ul style="list-style-type: none"> <li>Investment in worker accommodation continues to reduce the reliance on urban accommodation</li> </ul>
1.4	Continue to improve the understanding and perception of work and careers in the horticulture sector by leveraging the horticulture workforce and careers story and supporting materials and resources	Industry	ST - LT	<ul style="list-style-type: none"> <li>Annual survey and review of activity and success with published report showing case studies and profiles.</li> <li>Social media is being used to increased awareness, reach, and impact on prospective workforce</li> <li>Career Progression Manager network continues to create change with schools and VE providers nationally.</li> <li>Outcomes measured against the PGF contract nationally.</li> </ul>	<ul style="list-style-type: none"> <li>Key target markets have an improved understanding of the work and career opportunities available in horticulture and this is translating into increased interest in, and placement into, horticulture roles</li> <li>Vocational Education for Horticulture is present in Schools nationally and regarded as a career of choice.</li> </ul>
1.5	Support a sustained media and marketing horticulture profile-raising and promotional campaign ((including regular work expos in Hawke's Bay and other regions)	Industry	ST	<ul style="list-style-type: none"> <li>Campaigns are developed and socialised across the country that highlight the great career opportunities in horticulture.</li> <li>Work expos are interactive and provide good context around opportunities available in horticulture today.</li> <li>Resources and media are fit for purpose and show positive images and stories of horticulture.</li> </ul>	<ul style="list-style-type: none"> <li>Key target markets have an improved understanding of the work and career opportunities available in horticulture</li> <li>Horticulture careers have a presence across a wide variety of media platforms.</li> </ul>
1.6	Continue to promote career opportunities and the benefits of working in horticulture through the Career Progression Manager network and engagement with the education and training sector	Industry	ST	<ul style="list-style-type: none"> <li>Working with workforce development councils to ensure Horticulture has influence over the programmes and pathways available to industry.</li> <li>Measuring outcomes annually against KPI as required for the PGF Te Ara Mahi programme.</li> <li>Working with Trade Training, Gateway, and STAR providers to ensure that Horticulture is available as an option nationally through these schemes and that they link into Industry as an outcome.</li> </ul>	<ul style="list-style-type: none"> <li>Key target markets have an improved understanding of the work and career opportunities available in horticulture and this is translating into increased interest in, and placement into, horticulture roles</li> <li>Horticulture has a continually increasing number of rangatahi into apprenticeship and trainee programmes nationally.</li> </ul>
1.7	Partner with Maori, Pasifika, and Asian communities, to support participation, achievement, and progression in the horticulture sector for all people from all communities.	Industry	ST - LT	<ul style="list-style-type: none"> <li>Demographic reporting of the Career Progression Managers placements into industry.</li> <li>Qualitative reporting of the number of bespoke programs developed through both the Career Progression Manager Network, and the proposed Workforce Development Managers Network for Māori</li> <li>Number of events that raise diversity and inclusion issues per year supported by the horticulture industry</li> </ul>	<ul style="list-style-type: none"> <li>Māori, Pasifika, and Asian communities, and women have an improved understanding of the work and career opportunities available in horticulture and this is translating into increased interest in, and placement into, horticulture roles</li> <li>A positive and evolving understanding of inclusion and diversity in our workforce with increased numbers of diverse demographics moving into senior Management roles across the Industry.</li> </ul>
1.8	Partner and support Māori-led engagement and attraction initiatives that provide sustainable employment for whānau and hapū.	Industry	ST - LT	<ul style="list-style-type: none"> <li>In conjunction with Iwi and whānau develop Māori led programmes that align with Mātauranga Māori principles.</li> <li>Partner with Iwi industry to support innovation and succession within their businesses that will enable long term sustainability.</li> </ul>	<ul style="list-style-type: none"> <li>Māori have an improved understanding of the work and career opportunities available in horticulture and this is translating into increased interest in, and placement into, horticulture roles at multiple levels across industry.</li> </ul>
1.9	Co-design and deliver a Māori Horticulture immersion Program that supports whānau to understand and see the international context of Horticulture and global collaboration.	Industry	MT	<ul style="list-style-type: none"> <li>Māori Horticulture immersion Program.</li> </ul>	<ul style="list-style-type: none"> <li>Māori have an improved understanding of the work and career opportunities available in horticulture and this is translating into increased interest in, and</li> </ul>

				<ul style="list-style-type: none"> <li>• Codesign and deploy International immersion programme for Iwi and whānau who are involved or entering the horticultural industry.</li> </ul>	placement into, horticulture roles and succeeding into Māori owned industry.
1.10	Support regional Women's Horticulture groups through the National Women in Horticulture Program	Industry	ST	<ul style="list-style-type: none"> <li>• Number of regional Women in Horticulture events conducted per year</li> </ul>	<ul style="list-style-type: none"> <li>• Women have an improved understanding of the work and career opportunities available in horticulture and this is translating into increased interest in, and placement into, horticulture roles</li> </ul>
1.11	Continue to partner with MSD on assisting Jobseekers into employment	Industry/Govt	ST - LT	<ul style="list-style-type: none"> <li>• Working with industry to show active participation in programmes that offer sustainable employment.</li> <li>• At least 200 people supported into employment per annum.</li> <li>• An effective recording system is developed to provide data on an annual basis.</li> </ul>	<ul style="list-style-type: none"> <li>• The target for assisting Jobseekers into employment is achieved exceeded and monitored annually.</li> </ul>
1.12	Continue to partner with MSD on industry partnership programmes that are targeting sustainable employment and industry training.	Industry/Govt	ST - LT	<ul style="list-style-type: none"> <li>• Working with Business to communicate effective programmes that support industry and support attraction and retention of workforce.</li> <li>• At least 100 per annum into programmes.</li> <li>• An effective recording system that tracks employment and training data and can be reported on annually.</li> </ul>	<ul style="list-style-type: none"> <li>• The target for partnering with MSD on industry partnership programmes is achieved exceeded and continually improved against annual reporting.</li> </ul>
1.13	Continue to partner with MSD on programmes to support sole parents, NEETS, and those with specific health or disability needs	Industry/Govt	ST - LT	<ul style="list-style-type: none"> <li>• Working with Business to communicate effective programmes that support industry and support attraction and retention of workforce.</li> <li>• At least 50 per annum into programmes.</li> <li>• An effective recording system that tracks employment and training data and can be reported on annually.</li> </ul>	<ul style="list-style-type: none"> <li>• The target for partnering with MSD on programmes to support sole parents, NEETS, and those with specific health or disability needs is achieved or exceeded and data is recorded and reported annually.</li> </ul>
1.14	Continue to partner with Corrections to support the 'release to work' programme and provide employment options for people currently serving community sentence	Industry/Govt	ST - LT	<ul style="list-style-type: none"> <li>• Working with Business to communicate effective programmes that support industry and support attraction and retention of workforce.</li> <li>• At least 30 per annum into programmes.</li> <li>• An effective recording system that tracks employment and training data and can be reported on annually.</li> </ul>	<ul style="list-style-type: none"> <li>• The target for partnering with Corrections to support the 'release to work' programme and provide employment options for people currently serving community sentence is achieved or exceeded and data is recorded and reported annually.</li> </ul>
1.15	Create clear pathways to higher skill and pay levels for skilled and less skilled positions within the horticulture sector	Business	ST - LT	<ul style="list-style-type: none"> <li>• Individual Workforce Development Plans at employer level. NZAPI will compile, aggregate and report this information.</li> </ul>	<ul style="list-style-type: none"> <li>• Individual employers have developed clear pathways to higher skill and pay levels for employees</li> </ul>
1.16	Pay the Living Wage for all non-apprentice permanent employees	Business	ST	<ul style="list-style-type: none"> <li>• Individual Workforce Development Plans at employer level. NZAPI will compile, aggregate and report this information.</li> </ul>	<ul style="list-style-type: none"> <li>• All non-apprentice permanent employees are being paid the Living Wage</li> </ul>
1.17	Continue to increase piece rates for seasonal workers to reflect market demand and attract available and willing NZers to seasonal roles	Business	ST - LT	<ul style="list-style-type: none"> <li>• Individual Workforce Development Plans at employer level. NZAPI will compile, aggregate and report this information.</li> </ul>	<ul style="list-style-type: none"> <li>• Piece rates for seasonal workers reflect market demand and are attracting available and willing NZ workers to seasonal roles</li> </ul>
1.18	Continue to partner with Ngāti Kahungunu and use their 'Tihei Mauri Ora' platform to provide Manaakitanga and pastoral care for RSE workers. This initiative is being used to investigate for other growing regions in NZ	Industry	ST	<ul style="list-style-type: none"> <li>• Use of 'Tihei Mauri Ora' platform to provide Manaakitanga and pastoral care</li> <li>• Use of 'Ask Your Team' survey</li> </ul>	<ul style="list-style-type: none"> <li>• RSE workers are being provided with appropriate and effective Manaakitanga and pastoral care and that this is translating into high levels of wellbeing</li> </ul>
1.19	Ensure workers have access to year-round opportunities by working with other horticulture businesses across NZ and with other regional businesses to share and develop talent	Business	ST-MT	<ul style="list-style-type: none"> <li>• Relevant websites (e.g., Work the Seasons, Go Hort, Pick Tiki) are maintained and data gathered and reported.</li> <li>• Career Progression Managers will collaborate across sectors and provide information back into Industry groups.</li> </ul>	<ul style="list-style-type: none"> <li>• People are taking up opportunities across regions or employers where this is an option for them e.g., students, older-nomads, migrants</li> </ul>
1.20	Provide low cost and simple transport options for people to get to work e.g. free transport from accommodation to orchards/packhouses; ride-sharing options and guided convoys; grouping of workers together that rely on a single vehicle to get to place of work; reimbursing staff for travel time and expenses if travelling between orchards; fuel vouchers for staff	Business	ST	<ul style="list-style-type: none"> <li>• Individual Workforce Development Plans at employer level. NZAPI will compile, aggregate and report this information.</li> <li>• NZAPI will stocktake programmes that are available to New Zealanders at present and monitor and</li> </ul>	<ul style="list-style-type: none"> <li>• Flexible working conditions are being offered and this is helping to overcome a barrier to employment.</li> </ul>
1.21	Provide housing/accommodation options for workers	Business	ST	<ul style="list-style-type: none"> <li>• Individual Workforce Development Plans at employer level. NZAPI will compile, aggregate and report this information.</li> </ul>	<ul style="list-style-type: none"> <li>• Housing/accommodation options are being provided to workers and this is helping to overcome a barrier to employment</li> </ul>
1.22	Offer flexible working conditions where practical e.g. solo parent programmes to enable job-sharing so that part-time shift work is available; shifts that fit with school hours; and reduced days of work for people who can't work a full week	Business	ST	<ul style="list-style-type: none"> <li>• Individual Workforce Development Plans at employer level. NZAPI will compile, aggregate and report this information.</li> </ul>	<ul style="list-style-type: none"> <li>• Flexible working conditions are being offered and this is helping to overcome a barrier to employment</li> </ul>
1.23	Understand reasons of exiting by conducting exit interviews and/or surveys	Business	ST	<ul style="list-style-type: none"> <li>• Individual Workforce Development Plans at employer level. NZAPI will compile, aggregate and report this information.</li> </ul>	<ul style="list-style-type: none"> <li>• Increased understanding of reasons for exit and this information is being used to make changes to retain talent</li> </ul>
1.24	Ensure minimum employment standards are in place for all workers and at all worksites	Business	ST - LT	<ul style="list-style-type: none"> <li>• Annual GRASP audit</li> <li>• Labour Inspectorate audits</li> <li>• Individual Workforce Development Plans</li> </ul>	<ul style="list-style-type: none"> <li>• Minimum employment standards are in place for all workers and at all worksites</li> </ul>

					<ul style="list-style-type: none"> <li>100% of workers have written employment agreements that meet legislation requirements.</li> <li>100% of new workers receive employment agreements before starting work.</li> <li>Accurate records of working hours and paid/unpaid rest breaks in accordance with minimum employment standards, including for contract work</li> </ul>
1.25	Improve physical working environments through the use of Global GAP	Business	ST-LT	<ul style="list-style-type: none"> <li>Annual Global GAP audit</li> </ul>	<ul style="list-style-type: none"> <li>Physical working environments are meeting or exceeding Global GAP requirements</li> </ul>
1.26	Develop and publish an annual benchmarking wage-rate to role report	Industry	ST-	<ul style="list-style-type: none"> <li>Annual survey</li> <li>Individual Workforce Development Plans</li> <li>Alignment with Govt agency data collections and workforce data</li> </ul>	<ul style="list-style-type: none"> <li>Industry and government have greater transparency on the wage rates and salaries for roles across the industry</li> </ul>
1.27	Continue developing a human resources toolkit for sector use	Industry/Business	ST	<ul style="list-style-type: none"> <li>Toolkit will be developed and distributed to all growers through industry and product group communication channels both digitally and physically</li> <li>Tools and programmes of learning will be accessible for all learners and will have options around NZQA acknowledgement.</li> <li>Innovative blended options will be developed to cater to all learner needs.</li> </ul>	<ul style="list-style-type: none"> <li>HR practices are meeting or exceeding minimum standards and are supporting the attraction and retention of talent</li> </ul>
<b>3.</b>	<b>TRAIN &amp; GROW TALENT</b>	<b>RESPONSIBILITY: LEAD/SUPPORT</b>	<b>TIMEFRAME</b>	<b>Measuring and tracking the action</b>	<b>What do we want to see if we're being successful</b>
3.1	Increase engagement between industry and the education system	Industry/Govt	ST-LT	<ul style="list-style-type: none"> <li>Participate fully in COVE and support projects across the wider Horticulture industry.</li> <li>Support the Food and Fibre Workforce Development Council to better understand and guide effective skill development (MDC)</li> <li>Continue a strong relationship with Primary ITO as it transitions to Te Pūkenga</li> <li>Link regional leadership groups back to sector needs and advise to MBE and TEC</li> </ul>	<ul style="list-style-type: none"> <li>The education system is structured so that it is responsive to industry needs and appropriate programmes are being developed and supplied to support the pipeline of talent required to meet sector and employee needs.</li> <li>Industry is ready for the future of work and has skill standards and micro credentials available that provide appropriate competencies.</li> </ul>
3.2	In conjunction with the Primary Industry Workforce Development Council (MDC) and Regional Skills Leaders Group (RSLG) and through the Primary Industry Centre of Vocational Excellence (COVE), ensure industry expertise is used to deliver integrated programmes of training as part of the new Te Pūkenga eco-system	Govt/Industry	ST	<ul style="list-style-type: none"> <li>Identify new and emerging skills needs</li> <li>Prioritisation of skills needs confirmed</li> <li>Development timeframes for programmes confirmed</li> </ul>	<ul style="list-style-type: none"> <li>Productivity constraints relating to skill deficits are overcome</li> </ul>
3.2	Undertake workforce requirement, composition and capability planning	Business/Industry	ST-LT	<ul style="list-style-type: none"> <li>Individual Workforce Development Plans at employer level. NZAPI will compile, aggregate and report this information.</li> </ul>	<ul style="list-style-type: none"> <li>Employers understand what skills, roles and training will be required to meet business needs and support employee personal development objectives</li> </ul>
3.3	Partner with iwi/hapū to support training and employment initiatives and create pathways for whānau into careers in horticulture	Industry	ST-LT	<ul style="list-style-type: none"> <li>NZAPI develop framework of learning to allow better understanding of mātauranga maori across sector.</li> <li>NZAPI will enable relationships with maori at a board level</li> <li>Number of initiatives that are supported</li> </ul>	<ul style="list-style-type: none"> <li>Iwi/hapū are leading the development of fit-for-purpose training and employment programmes with the support of industry</li> <li>This is translating into better training and employment outcomes for iwi/hapū</li> <li>Maori industry has programmes and learning options that enable te ao maori to be active in their business.</li> </ul>
3.4	Invest and partner with Universities to develop the appropriate qualifications. This will involve: a. Supporting the industry embedded degree components of the new qualifications through: i. developing competency requirements ii. defining specialisations iii. supporting pathway development iv. support the commitment of students v. developing the structure of the course and sequencing the projects. b. Coordination and support for: i. Experiential learning ii. Field trips, Internships, and projects. iii. International Horticultural Immersion Programme (IHIP) iv. Collaboration with Crown Research Institutes (CRI's) particularly Plant & Food Research	Industry	ST-LT	<ul style="list-style-type: none"> <li>Hort NZ &amp; NZAPI tracking this activity and continuing to support activities at a governance and operational level.</li> </ul>	<ul style="list-style-type: none"> <li>Appropriate qualifications are being developed and supplied to support the pipeline of talent required to meet sector and employee needs</li> <li>New methods of delivery are being piloted and deployed across all sectors of the Horticultural industry.</li> </ul>
3.5	Provide more pastoral support for learners so that greater numbers are finishing training	Industry	ST-LT	<ul style="list-style-type: none"> <li>Investment in, and provision of, pastoral support</li> </ul>	<ul style="list-style-type: none"> <li>Learners are being provided the pastoral care required to support them through training.</li> <li>Learners are completing programmes of study.</li> <li>All learners complete their programmes of study in both qualifications and micro credentials.</li> </ul>
3.6	Evaluate the structure of the programmes available to assess content and delivery to ensure training is fit for purpose	Industry/Govt	ST	<ul style="list-style-type: none"> <li>NZAPI and Industry via the new RoVE entities will influence and guide skills and workforce needs at every stage of development and assessment.</li> </ul>	<ul style="list-style-type: none"> <li>Training programmes are fit for purpose and delivering the skills needed by employees and employers</li> </ul>

3.7	Support delivery of training programmes that are fit for purpose and designed around the needs of employers and employees	Govt/Industry	ST-LT	<ul style="list-style-type: none"> <li>Industry will pilot innovative methods of delivery in conjunction with Te Pūkenga and CoVE to continually improve learner experience and outcomes.</li> <li>Industry will support providers to have up to date and fit for purpose resources and capacity that will enable best practice delivery of skill-based learning consistently across all growing regions.</li> </ul>	<ul style="list-style-type: none"> <li>Industry has trained workers to operate and manage all aspects their business safely and effectively.</li> <li>Training programmes have been designed around the needs of employers and employees and are fit for purpose</li> </ul>
3.8	Promote training programmes that are fit-for-purpose to suitable candidates	Industry/Business	ST-LT	<ul style="list-style-type: none"> <li>Work with providers and industry to ensure that criteria is visible for different learner programmes and micro credentials</li> </ul>	<ul style="list-style-type: none"> <li>A training resources hub exists on GoHort and is routinely updated and shared with industry</li> <li>Targeted training programs are routinely offered where needed</li> </ul>
3.9	Deliver industry-based workshops that can be used toward qualifications	Industry/Govt	MT-LT	<ul style="list-style-type: none"> <li>NZAPI will actively work with the VDC and Te Pūkenga to develop a framework that enables recognition of prior skills and industry extension programmes to have equivalence to NZQA credits and can be used in conjunction with industry programmes of learning.</li> </ul>	<ul style="list-style-type: none"> <li>Industry-based workshops are being run and can be used toward qualifications</li> <li>NZAPI will have extension programmes that can be utilised for learners to use this learning in conjunction with their training programme nationally.</li> </ul>
3.10	Deliver regional grower workshops and education days that can be used toward qualifications	Industry/Govt	ST-LT	<ul style="list-style-type: none"> <li>NZAPI will actively work with the VDC and Te Pūkenga to develop a framework that enables recognition of prior skills and industry extension programmes to have equivalence to NZQA credits and can be used in conjunction with industry programmes of learning.</li> </ul>	<ul style="list-style-type: none"> <li>Regional grower workshops and education days are being delivered and these can be used toward qualifications</li> <li>NZAPI will have extension programmes that can be utilised for learners to use this learning in conjunction with their training programme nationally.</li> </ul>
3.11	Provide online learning to supplement face to face delivery of training	Govt/Industry	ST	<ul style="list-style-type: none"> <li>NZAPI will work with providers and RoVE entities and with relevant government agencies to develop and deploy online modules that can be used to blend learning across the learner programmes nationally..</li> </ul>	<ul style="list-style-type: none"> <li>Online training programmes are being developed and made available and this is giving better access to more New Zealanders to consider the horticulture industry and the career opportunities it provides</li> <li>Provides opportunity for those in work or in full time learning to access online learning as a part of a learner programme..</li> </ul>
3.12	Promote the value of training to employers and employees through the Career Progression Manager network and innovative national initiatives	Industry	ST	<ul style="list-style-type: none"> <li>Place 100+ trainees and apprentices per year with employers through the Career Progression Manager Network and workforce development managers nationally.</li> <li>Each individual workforce plan has numbers against that organisations workforce goal for trainees and apprentices annually.</li> </ul>	<ul style="list-style-type: none"> <li>Employers and employees have a clear understanding of the value of training and the options and support available.</li> <li>Industry are supportive and open to employing trainees from all sectors of the community.</li> </ul>
3.13	Continue to support and promote participation in established leadership and development initiatives including the Horticulture NZ Leadership Program, Horticultural Immersion Programs, Kellogg, Nuffield, and Agri-Women's Development Trust Programs.	Industry	ST-MT	<ul style="list-style-type: none"> <li>Report numbers of Hort industry/ graduates per year through each leadership program</li> </ul>	<ul style="list-style-type: none"> <li>Leadership and development initiatives are supporting employees to gain skills and experience and this is having a positive impact on retention, career progression and the ability of the sector to meet its objectives.</li> </ul>
3.14	Facilitate regional and international study exchange and networking opportunities for peer-to-peer learning through the horticulture immersion programs	Industry	ST-MT	<ul style="list-style-type: none"> <li>Once the ability to travel internationally is reinstated industry will run IHIP programmes for emerging leaders and undergraduates on an annual basis to emerging overseas markets.</li> </ul>	<ul style="list-style-type: none"> <li>The Horticulture Immersion Programs IHIP will report each year for the emerging and executive leaders from the Hort sector that travel overseas.</li> <li>A report of insights and experiences will be published and supplied to industry and government agencies.</li> </ul>
3.15	Promote and support scholarships e.g. Nuffield, Kellogg, Hort NZ Leadership Program, Horticulture Immersion Programs, Hort NZ Scholarships and Conference Scholars Leadership Program, Ahuwhenua Program.	Industry	ST-MT	<ul style="list-style-type: none"> <li>Scholarships are offered annually and awarded based on merit and need with support in the form of professional development and funding support for emerging leaders.</li> <li>Funding is found from government and private sources along with strong contributions from industry.</li> <li>Number of Hort internships advertised for high schoolers</li> </ul>	<ul style="list-style-type: none"> <li>Scholarships are helping to raise the profile of the sector and providing an effective pathway of talent into horticulture.</li> <li>Funders support ongoing programmes and acknowledge the worth of these programmes.</li> <li>An annual report is published with insights and experiences.</li> </ul>
3.16	Continue the collation, support, and network of the GoHort internship program and extend this to include school leavers, and lateral moving tertiary graduates	Industry	ST	<ul style="list-style-type: none"> <li>Number of Hort internships advertised for tertiary students</li> <li>Number of Hort internships advertised for graduates</li> <li>Number of regional/national events to support the interns/their employers held</li> </ul>	<ul style="list-style-type: none"> <li>Internships are providing an effective pathway of talent into the horticulture sector.</li> <li>Interns are emerging through industry pathways into leadership roles.</li> </ul>

3.	ACCESSING SUFFICIENT SEASONAL LABOUR	RESPONSIBILITY: LEAD/SUPPORT	TIMEFRAME	Measuring and tracking the action	What do we want to see if we're being successful
3.1	Provide certainty for horticulture businesses that they will be able to meet peak seasonal labour demands by supporting the RSE scheme and the numbers required over the next [5/10] years (to be reviewed on a yearly basis)	Government	ST	<ul style="list-style-type: none"> <li>Government agreement to support RSE scheme and the numbers of workers required to support short to medium term seasonal labour demand</li> </ul>	<ul style="list-style-type: none"> <li>RSE workers are helping to meet seasonal labour demand and are supporting the growth of permanent positions across the industry and associated value and supply chain</li> </ul>
3.2	Employers will support RSE workers and other employees to take up COVID-19 vaccination when available	Business/Industry	ST	<ul style="list-style-type: none"> <li>Employers will keep records</li> </ul>	<ul style="list-style-type: none"> <li>A fully protected horticultural workforce</li> </ul>
3.3	Support an early COVID-19 vaccine rollout in the Pacific so that RSE workers who would like to take up opportunities in NZ are as protected as NZers	Government	ST	<ul style="list-style-type: none"> <li>NZ government is supporting the fast-tracking of the COVID-19 vaccination rollout in the Pacific</li> </ul>	<ul style="list-style-type: none"> <li>Pacific Islands are vaccinated from COVID-19 and have herd immunity</li> </ul>
3.4	Subject to 1.6 below, re-consider the flows and sequencing of essential migrant workers who have approved access to MIQ spaces so that RSE workers arrive in NZ to assist peak season work. In practice this would see less MIQ space for RSE workers between May-August and more in Sept-Oct and then again from February 2022 (ahead of the 2022 harvest).	Government	ST	<ul style="list-style-type: none"> <li>NZ government is working closely with industry to appropriately sequence the flow of RSE workers through MIQ (if needed)</li> </ul>	<ul style="list-style-type: none"> <li>Adequate MIQ space is available for the RSE workers required to support the 2021/22 harvest season and the flow of RSE workers through MIQ (if needed) is aligned with when the workers are needed in NZ</li> </ul>
3.5	Consider allowing RSE workers from COVID-free countries who have had the COVID-19 vaccine to travel to NZ without quarantine	Government	ST	<ul style="list-style-type: none"> <li>NZ government decisions</li> </ul>	<ul style="list-style-type: none"> <li>RSE workers from COVID-free countries who have had the COVID-19 vaccine can travel to NZ without quarantine</li> </ul>
3.6	Explore if and how Iwi-based support systems in other regions could help provide pastoral care for RSE workers/guest workers like Ngāti Kahungunu's 'Tīhei Mauri Ora' platform	Industry	ST	<ul style="list-style-type: none"> <li>Use of Iwi-based support systems</li> </ul>	<ul style="list-style-type: none"> <li>RSE workers/guest workers being provided with pastoral care by Iwi-based support systems in regions</li> </ul>
4.	DEVELOP & ADOPT TECHNOLOGY AND BEST PRACTICE	RESPONSIBILITY: LEAD/SUPPORT	TIMEFRAME	Measuring and tracking the action	What do we want to see if we're being successful
4.1	Create and resource a focused innovation programme to help accelerate horticulture-related technological development and adoption	Govt/Industry	ST	<ul style="list-style-type: none"> <li>NZ government agrees to partner with industry to develop a focused innovation programme to help accelerate horticulture-related technological development and adoption</li> </ul>	<ul style="list-style-type: none"> <li>The partnership and focused innovation programme is leading to accelerated development and adoption of horticulture-related technological and this is helping to solve current labour market challenges and support the industry's global competitiveness</li> </ul>
4.2	Hold annual technology and innovation forums with industry, CRI's, Universities, and solution providers	Industry	LT	<ul style="list-style-type: none"> <li>Identify innovation opportunities for solution providers</li> </ul>	<ul style="list-style-type: none"> <li>Investment in technology and the adoption of best practice is supporting productivity growth and international competitiveness</li> </ul>
4.3	Establish an investment fund for labour productivity solutions	Govt/Industry	LT	<ul style="list-style-type: none"> <li>Annually measure adoption and effect</li> <li>Funding available for innovation</li> </ul>	<ul style="list-style-type: none"> <li>Investment in technology and the adoption of best practice is supporting productivity growth and international competitiveness</li> </ul>
4.4	Consider creating a Global Centre of Excellence for Apples & Pears Intellectual Property at the new Hawke's Bay FoodEast facility	Industry/Govt	MIT	<ul style="list-style-type: none"> <li>Global Centre of Excellence for Apples &amp; Pears that designs and develops Apple and Pear varieties that have Intellectual Property rights linked back to the New Zealand industry and its members.</li> <li>Students in multiple disciplines are given opportunity to learn and research the latest aspects of plant breeding and variety design with CRI's and innovative grower groups from across the Horticulture industry.</li> </ul>	<ul style="list-style-type: none"> <li>A report which highlights the success of these varieties is produced and distributed which shows the international strength of our industry and the importance of it to the world.</li> <li>State of the art learning that offers learners and researchers the space and content to understand and innovate for the future needs of industry.</li> </ul>
4.5	Create a Horticulture Technology Consultative Group to provide a network and platform for growers and packers to collectively articulate technology needs/challenges and to collaborate with government on these needs/challenges	Industry	ST	<ul style="list-style-type: none"> <li>Horticulture Technology Consultative Group is created</li> </ul>	<ul style="list-style-type: none"> <li>Horticulture Technology Consultative Group is providing an effective platform for growers and packers to collectively articulate technology needs/challenges and to collaborate with government on these needs/challenges</li> </ul>
4.6	Hold an annual Horticulture Technology Summit to provide a focal point for - sharing industry challenges/needs in relation to technology; sharing information on horticulture-related technological developments; and connecting the industry to international experts and knowledge	Industry	ST-MIT	<ul style="list-style-type: none"> <li>Horticulture Technology Summit is developed and held</li> </ul>	<ul style="list-style-type: none"> <li>Horticulture Technology Summit is acting as an effective focal point for - sharing industry challenges/needs in relation to technology; sharing information on horticulture-related technological developments; and connecting the industry to international experts and knowledge</li> </ul>
4.7	Work with Māori to develop new production systems and cultivars	Māori-led/Industry	ST-LT	<ul style="list-style-type: none"> <li>Māori-led initiatives to develop new production systems and cultivars</li> </ul>	<ul style="list-style-type: none"> <li>TBC-- to design with Māori</li> </ul>
4.8	Explore with Māori the opportunities presenting in relation to indigenous branding that connects Māori cultural values and high-quality, sustainability-produced horticultural products	Māori-led/Industry	ST-LT	<ul style="list-style-type: none"> <li>Māori-led initiatives</li> </ul>	<ul style="list-style-type: none"> <li>TBC-- to design with Māori</li> </ul>
4.9	Develop a programme that supports an annual offshore trip by a group of nominated industry representatives to explore latest horticulture-related technological developments and how these are being implemented	Industry	MIT	<ul style="list-style-type: none"> <li>Programme is developed and implemented</li> </ul>	<ul style="list-style-type: none"> <li>This programme is helping the industry 'look over the horizon' and effectively connect to leading edge global developments</li> </ul>
4.10	Provide industry-participants with best-practice decision making frameworks to assist with the justification and effective adoption of new workforce innovations	Industry	ST-MIT	<ul style="list-style-type: none"> <li>Best-practice decision making frameworks are compiled and provided to growers and packers via online resources and tool kits.</li> </ul>	<ul style="list-style-type: none"> <li>Industry-participants are using best-practice decision making frameworks to assist with the justification and effective and accelerated adoption of new workforce innovations</li> </ul>
4.11	Work with government to develop a more fine-grained and robust view of productivity changes in the horticulture sector to support the joint industry/government innovation work programme and partnership	Industry/Govt	ST	<ul style="list-style-type: none"> <li>NZ government agrees to partner with industry to develop a more fine-grained and robust view of productivity changes in the horticulture sector</li> </ul>	<ul style="list-style-type: none"> <li>An agreed industry/government view of productivity in the horticultural sector and a richer understanding of the critical drivers and issues in order to inform the proposed industry/govt partnership</li> </ul>

## 11 ANNEX A: LABOUR DEMAND COEFFICIENTS

**Table 34: Permanent labour demand coefficients in 2021 and 2040**

Permanent Labour Coefficients		2021	2040
On Orchard	Per ha planted	0.17 permanent workers	0.1 permanent workers
In the Packhouse & Coolstores	For every 1000 MT	2.0 permanent workers	1.0 permanent workers
In head office, corporate services, shipping, marketing, sales etc	For every 1000 MT	1.25 permanent workers	1.25 permanent workers

**Table 35: Seasonal labour demand coefficients in 2021 and 2040**

Seasonal Labour Coefficients		2021	2040
Picking	Gross MT/person	74.1 MT	111.15MT
Packing	Gross MT/person	119.5 MT	179.25MT
Thinning	ha/person	1.8ha	2.7ha
Pruning	ha/person	4.6ha	6.9ha

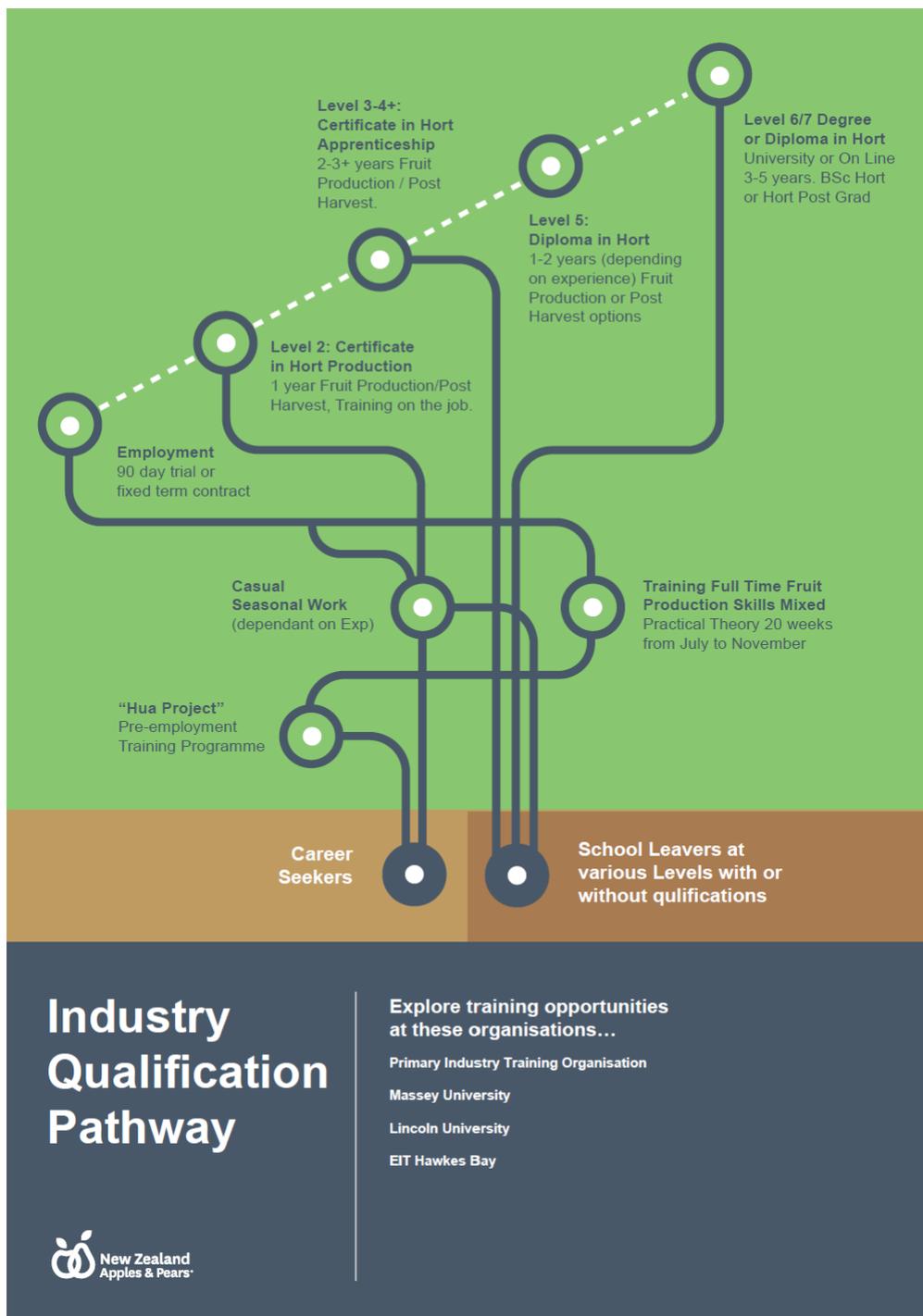
## 12 ANNEX: FLOW OF SEASONAL WORK IN HORTICULTURE

Table 36: Horticulture seasonal work by month

Month	Key tasks
January	<ul style="list-style-type: none"> <li>Harvest – apples, vegetables, summerfruit, blueberries</li> </ul>
February	<ul style="list-style-type: none"> <li>Harvest – apples, vegetables, summerfruit, blueberries</li> </ul>
March	<ul style="list-style-type: none"> <li>Harvest – apples, vegetables, summerfruit, kiwifruit, grapes, blueberries</li> </ul>
April	<ul style="list-style-type: none"> <li>Harvest – apple, kiwifruit, citrus, grapes, blueberries, vegetables</li> <li>Pruning – grape, summerfruit</li> </ul>
May	<ul style="list-style-type: none"> <li>Harvest – apple, kiwifruit, citrus, blueberries, vegetables</li> <li>Pruning – grape, summerfruit, blueberries</li> <li>Planting – strawberries (Northland/Auckland/Waikato)</li> <li>Pruning – apples, summerfruit, blueberries</li> <li>Planting – strawberries (Northland/Auckland/Waikato)</li> </ul>
June	<ul style="list-style-type: none"> <li>Harvest – kiwifruit, citrus, blueberries</li> <li>Pruning – grapes, apples, kiwifruit</li> <li>Vegetables</li> <li>Cane tying – Boysenberries</li> <li>Planting and development all crops</li> </ul>
July	<ul style="list-style-type: none"> <li>Harvest - citrus</li> <li>Pruning – kiwifruit, grapes, apples</li> <li>Cane tying – Boysenberries</li> <li>Vegetables</li> <li>Plant Nursery</li> <li>Pruning – apples, summerfruit, blueberries, citrus</li> <li>Planting and development all crops</li> </ul>
August	<ul style="list-style-type: none"> <li>Pruning – kiwifruit, grapes, apples</li> <li>Cane tying – Boysenberries</li> <li>Vegetables</li> <li>Plant Nursery</li> <li>Pruning – apples, summerfruit, blueberries, citrus</li> <li>Planting and development all crops</li> </ul>
September	<ul style="list-style-type: none"> <li>Vegetables</li> <li>Pruning – kiwifruit, grapes, citrus, apples</li> <li>Harvest – strawberries</li> <li>Plant Nursery</li> <li>Pruning – apples, summerfruit, blueberries, citrus</li> <li>Planting - onions</li> </ul>
October	<ul style="list-style-type: none"> <li>Thinning – Apples, summerfruit, kiwifruit</li> </ul>
November	<ul style="list-style-type: none"> <li>Thinning – Apples, summerfruit</li> </ul>
December	<ul style="list-style-type: none"> <li>Harvest – vegetables, summerfruit, blueberries</li> <li>Thinning – Apples, summerfruit</li> </ul>

# 13 ANNEX: APPLES & PEARS INDUSTRY LEARNING & QUALIFICATION PATHWAYS

Figure 6: Apples & Pears Industry Qualification Pathway



**Figure 7: Apples & Pears Industry Learning Pathways**



## Industry Learning Pathways

