



To: Hon Todd McClay, Minister of Agriculture
From: Julie Collins, Deputy Director-General, Policy & Trade
Karen Adair, Deputy Director-General, Agriculture & Investment Services

Introduction to the horticulture sector

Date	4 December 2023	Reference	AM23-0656
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Purpose

- This aide-memoire provides you with information on the horticulture sector and how The Ministry for Primary Industries (MPI) can support you in your role as the Minister of Agriculture.

Recommendation

- We recommend you forward this to Hon Nicola Grigg, the Associate Minister of Agriculture (Horticulture) for her information.

Key messages

- The horticulture sector is important to New Zealand as it provides fresh fruit and vegetables to domestic and international consumers, premium wine to consumers around the world, arable grains to our livestock industries, employment to over 75,000 people in our regions (during peak season) and total export revenue of \$7.3 billion (in the year to 30 June 2023).
- The horticulture sector is diverse with a range of industries that vary in size, and with produce grown throughout all New Zealand. There are opportunities for the sector to grow and increase exports. Achieving growth will require:
 - o collaboration across the sector to invest in research and development;
 - o opening up new markets; and
 - o dealing with a range of challenges including climate change and extreme weather events, the rising costs of inputs, and biosecurity and workforce issues.
- The industry has a plan to help achieve its growth potential: the *Aotearoa Horticulture Action Plan* provides a framework for collaboration across industry, government, science, and Māori to take advantage of opportunities and address the many challenges common across the sector.
- As the Minister of Agriculture, you have regulatory and non-regulatory roles to enable and support the horticulture sector to grow. You may also want to work with your Ministerial colleagues who will be leading the work in other areas important to the sector (for example, the Minister of Immigration, Minister for the Environment).

- MPI welcomes the opportunity to discuss your priorities for the horticulture sector and how we can support you to achieve them.

Overview of the horticulture sector

1. New Zealand's horticulture sector is diverse with industries of all sizes covering fruit, vegetables, wine, arable (for example, grains, seeds) and other plant industries (for example, flowers). Horticulture is grown throughout all New Zealand, with significant quantities of:
 - a) fruit grown in the Bay of Plenty, Hawke's Bay, Northland, Tasman-Nelson, Gisborne, and Central Otago;
 - b) vegetables grown in Canterbury, Hawke's Bay, Pukekohe, Gisborne, Waikato, and Manawatu-Wanganui;
 - c) winegrapes grown in Marlborough, Hawke's Bay, Canterbury, Central Otago, Tairāwhiti, and Wairarapa; and
 - d) arable crops such as wheat and maize grown in Canterbury, Southland, Manawatu, Hawke's Bay, Wairarapa and Waikato.

Horticulture is a significant part of the New Zealand economy

2. Horticulture contributes to many economic outcomes for New Zealand:
 - a) It supplies fresh fruit and vegetables for New Zealand and international consumers;
 - b) It employs over 75,000 people in our regions during the peak of harvest season;
 - c) It is a significant export earner, bringing in \$7.3 billion in total export revenue in the year to June 2023;
 - d) The arable industry supplies feed and forage for New Zealand's livestock sectors, and generates high value seed export revenue of approximately \$272 million to the year ending June 2023;
 - e) The wine industry produces premium wines to our export markets, generating \$2.4 billion to the year ending June 2023.
 - f) It is a relatively low greenhouse gas emitting sector; and
 - g) It serves an important role to the Māori economy, as Māori horticulture has grown 300 percent since 2006, and at current growth may double in size in the next decade.
3. Generally, most fruit is exported to international markets, vegetables serve the domestic market, and arable feeds New Zealand's livestock, but there are many exceptions and variations in this across the sector. Traditionally growth in the horticulture sector has primarily been driven by the export of premium products.
4. New Zealand's top three horticulture export industries in 2022/23 were kiwifruit (\$2.6 billion), wine (\$2.4 billion) and apples (\$902 million). **Appendix One** provides information on New Zealand's top ten largest export industries in horticulture and top export markets in the year ending June 2023.

There are various industry organisations representing the sector

5. There are over 25 industry organisations representing different parts of the horticulture sector and they are variable in size. Industry organisations carry out a range of industry good activities including: advocacy, research and development, education and training, and providing information to their industry. These activities may be funded by levies under the *Commodity Levies Act 1990* (further information on the Act is in *Key pieces of legislation and your Ministerial responsibilities* section below).
6. **Appendix Two** provides information on key industry organisations and their commodity levy.

Opportunities for engaging with the horticulture sector

7. MPI expects that several horticulture industry organisations will seek to meet with you or the Associate Minister of Agriculture (Horticulture) in early 2024 to discuss their perspectives and industry priorities. We can provide you with briefing material to support you in these meetings.
8. It may be useful to seek an early meeting with:
 - a) Horticulture New Zealand (HortNZ), as they represent the wider fruit and vegetables industries; and
 - b) kiwifruit industry bodies such as Zespri Group Limited (Zespri), and New Zealand Kiwifruit Growers Incorporated (NZKGI) since their commodity levy is soon to be replaced.
 - c) New Zealand Winegrowers, as they represent the wine industry, the second largest export industry within horticulture.

Key pieces of legislation and your Ministerial responsibilities

9. There are several important pieces of legislation/regulations that either enable the horticulture sector, or the sector must comply with to do business. This section details roles and responsibilities under legislation for the Minister of Agriculture.
10. **Appendix Three** lists upcoming decisions to be made by the Minister in the horticulture portfolio.

The Commodity Levies Act 1990

11. The Act allows for the making of levy orders, subject to potential levy payer support in a referendum, to enable industry organisations to fund industry good services. Levy orders last six years and the process to make them takes time. There are 25 levy orders (including two made under the *Wine Act 2003*) across the horticulture sector (see **Appendix Two** for the full list).
12. Under the Act, the Minister will make decisions to progress new levy orders and recommend the making of an Order in Council;
 - a) Currently one levy order is pending Cabinet Legislative Committee consideration: *Commodity Levies (Kiwifruit) Order 2023*. This needs to be completed before the end of 2023, prior to Christmas so that it can replace the existing levy order that expires on 27 February 2024. We will provide a briefing on this in the next few days. The levy will enable NZKGI to continue collecting levies and carry out its industry-good activities.

- b) An application for three new arable levy orders (arable crops, cereal silage, and maize) was received by the previous Minister of Agriculture. The Minister will be required to make a decision to progress the levy orders shortly after the New Year to ensure there is enough time to make the orders.
- c) There are multiple levy orders that are set to expire in the next one to two years. Many of these levy orders are anticipated to require Ministerial decisions to progress in 2024 (see **Appendix Two** for levy orders that are due to expire).

New Zealand Horticulture Export Authority 1987

- 13. The Act establishes the New Zealand Horticulture Export Authority (HEA) to promote the effective export marketing of horticultural products. Product groups voluntarily opt-in to come under the export framework and agree to meet industry-agreed minimum standards to export their products. Exporters are licensed by the HEA and must comply with the Act and the minimum standards. There are currently ten products under the HEA.¹
- 14. Under the Act, the Minister is required to appoint members to the HEA Board. In 2024, the Minister will be asked to appoint three members to the HEA Board, two nominated by HortNZ and one nominated by the Horticultural Exporters Council.
- 15. The HEA Act requires a performance review of the HEA every five years, and the next review is due to start on 1 October 2024. Prior to that date the Minister will be asked to approve the terms of reference for the review and appoint a reviewer. MPI will advise the Minister closer to the time.

Kiwifruit Export Regulations 1999

- 16. The Regulations give Zespri its 'single desk' export powers, giving it the sole power to export New Zealand-grown kiwifruit to all markets other than Australia. The Regulations also establish the independent regulator Kiwifruit New Zealand, which oversees Zespri's compliance with the Regulations and considers collaborative marketing applications (to allow others to export in collaboration with Zespri).
- 17. The Minister is required to appoint members to the Kiwifruit New Zealand Board. In 2024, the Independent Chair's position will become vacant, requiring the Minister to appoint a new chairperson. MPI will work with the Minister on this from March/April 2024 so that the appointment can be made by 1 October 2024.

Apple Transitional Export Quota Act 2022

- 18. The Act enables New Zealand to fulfil its obligations for fresh apple exports to the United Kingdom under the New Zealand-United Kingdom Free Trade Agreement, for tariff-free exports during New Zealand's off-season in 2023, 2024 and 2025. The Act provides for New Zealand Apples and Pears Incorporated, the industry organisation for the apple and pear industry, to design and administer the quota system for the tariff-free exports for the duration of the Act.

¹ Avocados, Blackcurrants, Buttercup Squash, Chestnuts, Kiwifruit (exports to Australia only), Persimmons, Summerfruit, Tamarillos, Truffles, Walnuts

19. The Act sets standards for the labelling and safety of wine, minimising and managing risks to human health arising from wine making and compliance with wine standards. The Minister for Food Safety is responsible for the *Wine Act 2003*.
20. While you are not responsible for the Act, there are two current levy orders under the Act with the same requirements as the *Commodity Levies Act 1990* which is usually delegated to the agriculture portfolio. These do not expire until 2027 and 2028.

Other important legislation for horticulture outside your portfolio responsibilities

21. In addition, there are many other pieces of legislation important to the horticulture sector that sit within other Minister's portfolios. You may wish to work with your colleagues to achieve your priorities for the horticulture sector, and we can discuss with you how we can assist you to do this. **Appendix Four** provides an overview of key pieces of legislation that sit outside the agriculture portfolio which are important to the horticulture sector, and the lead Minister(s).

Aotearoa Horticulture Action Plan (AHAP) provides a framework for sector growth

22. The Aotearoa Horticulture Action Plan² (AHAP) is an industry-led plan developed collaboratively between industry (led by HortNZ), government (led by MPI), science/research providers (led by Plant and Food Research), and Māori. The AHAP aims to sustainably grow and develop the sector through collaboration and achieve \$12 billion in annual horticulture revenue by 2035.
23. The AHAP highlights priorities across five key themes:
 - a) *Grow sustainably*: Improving sustainability and mitigating climate change.
 - b) *Optimise value*: Domestic and export market and consumer needs are understood, data is well utilised, and the value chain is optimised for demand.
 - c) *Māori are strong in horticulture*: Māori participation in high-value horticulture triples by 2035.
 - d) *Underpinned by science and knowledge*: A strong research and development programme and consideration of Mātauranga Māori enables, accelerates, and supports horticulture.
 - e) *Nurture people*: Horticulture attracts, retains, and grows great people.
24. The horticulture sector has signalled that they want to continue to use the AHAP as the organising framework for industry collaboration and how Government can support the sector's objectives, taking advantage of opportunities and tackling challenges. HortNZ is preparing an implementation plan for the AHAP with input from MPI and other AHAP partners.
25. The Minister may wish to engage with the horticulture sector on the AHAP to achieve the Government's priorities. MPI can provide advice to support the Minister.
26. Attached as **Appendix Five** is a copy of the AHAP.

² The AHAP covers fruits, vegetables, and nuts. It excludes forestry, wine, floriculture and arable for livestock feed.

Opportunities and challenges for the horticulture sector

27. There are many growth opportunities in the horticulture sector:
- a) Existing export focused, high value crops that generate close to or over \$1 billion in annual export revenue have potential for continued growth (Tier 1 crops such as kiwifruit, wine and apples).
 - b) Crops that generate more than \$100 million in annual export revenue have significant growth potential (Tier 2 crops such as onions and potatoes that could develop higher value export crops).
 - c) More domestically focused crops or crops that generate less than \$100 million in annual export revenue (Tier 3 crops such as citrus) will need support to ensure they remain productive.
28. The horticulture sector also faces a number of challenges, and MPI works to support the sector through these challenges in various ways. As an example, MPI has a regionally-based On Farm Support (OFS) advisory service that connects farmers and growers to government resources, advice, extension services, and learning and funding opportunities. To better service the horticulture sector, a Specialist Adviser Horticulture was appointed and provides nationwide support.

Market Access

29. Market access is of critical interest to the horticulture sector as one of the primary vehicles for revenue growth. Barriers to market access include both tariff and non-tariff measures. The New Zealand Horticulture Export Authority publishes a 'Barriers to our Export Trade' report every two years and the December 2022 report noted that the cost of tariffs on horticultural exports increased 11 percent in 2022 to \$168 million.
30. New Zealand currently has 14 Free Trade Agreements (with a Free Trade Agreement with the European Union agreed, but not yet entered into force), which cover around 75 percent of New Zealand exports. We understand the Government is **looking to establish new Free Trade Agreements with countries such as India.**
31. There are particularly opportunities under the recent Free Trade Agreements between New Zealand and the United Kingdom, and New Zealand and the European Union. These Free Trade Agreements offer reduced or new tariff free export opportunities for 99.9 percent of horticultural exports including apples, onions, kiwifruit and wine.
32. Southeast Asia features emerging markets that present horticulture exporters with significant opportunities for growing their export revenue. Southeast Asia is home to a rapidly growing middle class, with 65 percent of the population in Southeast Asia expected to join the middle class by 2030. New Zealand has good coverage of low or zero tariffs with the majority of Southeast Asian markets through its Free Trade Agreements³. However, significant non-tariff barrier reduction work remains which creates some market access difficulties. The combination of the rising Southeast Asian middle class and New Zealand's strong position on tariffs in the region through Free Trade Agreements presents opportunities for future growth for the horticulture sector (including potential for increased demand for premium New Zealand wine).

³ Including ASEAN – Australia New Zealand Free Trade Agreement, the Comprehensive and Progressive Trans-Pacific Partnership Agreement, the Regional Comprehensive Economic Partnership, and bilateral Free Trade Agreements with Thailand, Malaysia and Singapore.

33. In relation to obtaining new market access for the horticulture sector, MPI manages a prioritisation process to decide which new market access opportunities should be pursued. MPI considers criteria such as return-on-investment, strategic fit and feasibility, and through consultation with industry forums (such as the Plants Market Access Council) determines which commodities will be prioritised for new market access to a particular market.
34. We also understand the Government has a **focus to reduce the effect of non-tariff barriers in export markets to protect export revenue**. There are different ways to reduce the effect of non-tariff measures – one way is to negotiate for their removal or amendment (for example, bilaterally, multilaterally or through the World Trade Organization and associated international standard-setting bodies). Another way that MPI works to reduce the effect of non-tariff measure is through negotiating preferential technical arrangements that recognise New Zealand systems as achieving equivalent outcomes as those required by the importing country. These types of agreements can help to reduce the effects of non-tariff measures, recognising that often they can't be removed entirely.
35. These matters fall within your portfolio responsibilities as the Minister for Trade and the Minister of Agriculture.

Cyclone Gabrielle

36. Cyclone Gabrielle in 2023 caused significant damage to the horticulture sector. For example:
- a) In Hawke's Bay where 70 percent of New Zealand's apples are grown, 47 percent of the crop was significantly impacted with crop or tree losses and deposited silt still affecting trees.
 - b) In Northland where kūmara is almost exclusively grown in New Zealand, up to 90 percent of the crop was destroyed. This will have an ongoing effect due to lower availability of seed kumara for the next crop.
37. Additionally, infrastructure was affected including transport where roads were washed away, significantly damaged or obstructed, and packing facilities damaged.
38. MPI worked with the horticulture sector on the ground during and following the event and helped implement a variety of Government support packages to assist growers with recovery in the form of funding and loan schemes⁴, with \$15 million paid out to orchardists and vegetable growers over 845 grants. A further \$7.1 million has been allocated to industry partners, community groups, and Māori entities for materials to repair growing structures, urgent maintenance, expert advice, and recovery resources, to growers to support their recovery.

⁴ This includes support from the Primary Sector Response Fund (\$74 million), Rural Community Support Fund (\$4 million), Primary Industries North Island Weather Event (NIWE) Recovery Fund (\$30 million), Isolated Rural Communities (NIWE) Recovery Fund (\$5.4 million), Clearing and managing silt on commercial properties (including farmers and growers) (\$70 million), Debris and sediment removal from whenua Māori (\$30 million), North Island Weather Events Loan Guarantee Scheme (supports up to \$2 billion in new/refinancing of existing lending) and the North Island Weather Events Primary Producer Finance Scheme (\$240 million in loans).

39. Long-term recovery for the horticulture sector will be slow and further support may be required as silt still remains (particularly for the apple industry), and plants continue to die. It will take some years to recover, and some growers will not return to the industry.
40. We understand the Government intends to **reconstruct infrastructure damaged by Cyclone Gabrielle, while enhancing long-term resilience in flood-affected regions, meet with councils and communities to establish regional requirements for cyclone recovery** (where many horticulture industries may voice their priorities) and **make any additional required Orders in Council to speed up cyclone recovery efforts**. The Minister of Transport, the Minister for Infrastructure and the Minister for Emergency Management and Recovery are the lead ministers.

Workforce and immigration

41. There are just over 65,000 people working in the horticulture sector, making it the second largest workforce in the food and fibre sector⁵. The sector has significant seasonal variation across its workforce, with its size ranging from 57,200 people in September to 75,800 in March (peak season)⁶.
42. The sector has relied on the use of migrants through working holiday visas and the Recognised Seasonal Employer (RSE) Scheme⁷ to supplement the domestic workforce to do tasks such as pruning, picking and packing. Migrants on average are 21 percent of the horticulture sector's workforce. Migrants under the Accredited Employer Worker Visa (AEWV) allow employers to source skilled migrant workers. The sector has indicated they need additional migrant workers to meet their labour needs, more than what the RSE currently permits.
43. The sector is looking to develop a coordinated and collaborative approach to attract people to enter and grow in horticulture, with the right people in the right place.
44. We understand Government priorities include **increasing the cap on the RSE scheme, removing median wage requirements from Skilled Migrant Category visas, and improving the AEWV to focus the immigration system on attracting the workers and skills New Zealand needs**. The lead minister is the Minister of Immigration.

Water and land-use change

45. The horticulture sector faces some challenges around water and land-use change:
- a) Reliable access to freshwater and security of supply is needed for many forms of horticulture. An increasing number of catchments and aquifers, the volume of water allocated for use has reached or exceeded sustainable environmental limits.
 - b) Vegetable growing requires application of high quantities of nitrogen fertiliser, which can leach into waterbodies when not taken up the soil. Many key growing areas are breaching national bottom lines for nitrogen.

⁵ As at March 2021, there were 65,100 in the horticulture sector.

⁶ As at March 2021.

⁷ The RSE scheme allows the horticulture and viticulture industries to recruit a capped number of workers (predominantly from the Pacific) for seven to nine months when there are not enough New Zealand workers. The current cap is 19,500 workers.

- c) Horticulture has faced pressures for land-use change, with competition from other sectors in the primary industries, and non-primary industries such as urban development.
46. Water storage is a method to alleviate some pressure. Currently smaller on-farm water storage is enabled without consents, while larger water storage requires a difficult and costly consent process. Currently, the sector looks to adopt more productive and sustainable growing practices to enable growth and address some of the challenges such as water availability and storage.
47. While land-use competition from other primary industries remains, the challenge from urban development has been addressed through the National Policy Statement for Highly Productive Land (NPS-HPL), protecting highly productive land for land-based primary production. However, some concerns have been raised that the NPS-HPL does not adequately enable some horticultural activities such as building new greenhouses. Officials conducted public consultation on potential amendments to the NPS-HPL to provide for greenhouses to develop and relocate onto HPL⁸. Officials expect to provide an update on the outcomes of consultation in the new year.
48. We understand Government priorities include:
- a) **reviewing or replacing national direction (the National Policy Statement for Freshwater Management and NPS-HPL) to enable greater flexibilities** and rebalance aspects of these policies to better enable the primary sector, including horticulture; and
 - b) **removing regulatory barriers, including through the Resource Management Act 1991, to better enable primary industries**, including horticulture.
49. The lead ministers are the Minister for the Environment and the Minister Responsible for RMA Reform.

Biosecurity

50. Biosecurity incursions can damage the horticultural sector by disrupting how and what we farm and grow, and what we are able to trade. On the other hand, New Zealand has an advantage in that we are free of many of the agricultural pests of most concern. Our biosecurity system balances the need for New Zealand to benefit from trade and travel while managing the risks to New Zealand from pests and diseases.
51. Biosecurity is consistently reported as the top priority for the food and fibre sector and some horticulture industries have biosecurity levies (Government Industry Agreement (GIA) levies) to cost share biosecurity responses and pest management. There is also interest in gaining access to new agrichemicals for pest management as existing agrichemicals are restricted or banned by other Governments, but the sector has found this process costly and complex. Maintaining and enhancing biosecurity capability and capacity will be important for horticulture.

⁸ Other matters consulted on included: clarifying consent pathway for new specified infrastructure and potential pathway for intensive indoor primary production activities to develop and relocate on HPL.

52. The lead ministers are:
- a) the Minister for Biosecurity; and
 - b) the Minister for the Environment and the Minister for Food Safety (for agrichemicals).

Science and Technology

53. Research and development to obtain new technologies is critical for horticulture sector growth and to remain competitive in the global markets, but there are barriers, especially for smaller industries to fund this.
54. Some industries within horticulture have robust research and development programmes already, such as the kiwifruit, wine, apple and pear, and arable industries, but many others struggle with gaining access to the capital and capacity required for R&D programmes. Enhancing our science and knowledge will allow our mature export industries to grow further and accelerate smaller industries to increased exports. This may be done through developing new cultivars or incorporating new production technologies (for example, automation, production systems).
55. MPI and other Government agencies have worked with industries of every size to help fund their research and development. This includes MPI's Sustainable Food and Fibres Futures (SFF Futures) Fund, which co-funds research and innovation (including for the horticulture sector) to achieve outcomes that are not possible with private investment alone. Horticulture is the second largest sector in the SFF Futures portfolio, with investments in over 51 active projects totalling \$154.2 million (for which MPI provided \$71 million). **Appendix Six** provides a list of SFF Futures projects in the horticulture portfolio.
56. MPI has been involved in initiatives such as the Horticulture Technology Catalyst (HTC), which aims to grow the Horticulture Technology (HortTech) sector in New Zealand. The HTC focuses on improving international capability in the HortTech sector, but there is an opportunity to benefit domestic horticulture by balancing this with a stronger domestic focus. Improving New Zealand's capability in HortTech through initiatives like the HTC can benefit the production and technology industries in parallel.
57. We understand the Government wants to **liberalise regulations around genetic engineering**, including for crop development. The lead ministers are the Minister of Science, Innovation and Technology and the Minister for the Environment.

Industry structure and collaboration

58. The AHAP recognises greater need for cross-industry collaboration within horticulture to achieve good outcomes across the sector. This is because many challenges to horticulture are cross cutting, affecting all industries.
59. 9(2)(g)(i) [REDACTED]
- Some in the industry are exploring options for more collaboration to deliver more effective and efficient industry-good activities. You may wish to discuss with horticulture industry organisations what support they would like from Government to support more effective collaboration.

Next steps

60. We would welcome the opportunity to meet with you to discuss how we can support you to progress your priorities for the horticulture sector.
61. We can also provide further briefings on the matters covered in this briefing or other topics you would like to explore further.

Minister / Minister's Office

Seen / Referred

/ / 2023

Proactively Released

Appendix One: Top ten New Zealand horticulture exports year ending 30 June 2023

Produce	Export value (\$NZ)	Volume (metric tonnes)	Planted Area (Ha)	Main growing regions
Kiwifruit	2.6 billion	571,413	14,512	Bay of Plenty
Wine	2.4 billion	360.7 (million litres)	41,860	Marlborough, Hawke's Bay
Apple	902 million	515,000	11,190	Hawke's Bay, Tasman-Nelson
Onion	182.5 million	151,900	4,571	Auckland, Waikato, Canterbury
Processed Peas	140.2 million	58,500	5,686	Canterbury, Hawke's Bay
Processed Beans	50.7 million	17,500		
Potato	116.9 million	419,200	8,424	Canterbury, Auckland, Waikato
Cherries	83 million	6,647	1,250	Otago, Hawke's Bay
Avocado	61.5 million	37,983	4,912	Northland, Bay of Plenty
Buttercup Squash ⁹	52.9 million	32,234	3,830	Hawke's Bay, Gisborne

Source: FreshFacts 2023, New Zealand Winegrowers Incorporated Annual Report 2023

Note: Table excludes arable as different arable types are consolidated in reporting.

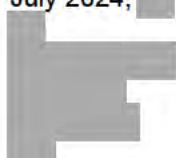
Key export Markets

1. The horticulture sectors exports (excluding wine and arable) for the year ending 30 June 2023 were valued at \$4.7 billion. Top export markets (excluding wine and arable) are Asia (\$3 billion), continental Europe (\$638 million), Australia (\$456 million) and North America (\$335 million).
2. The wine industry's exports for the year ending 30 June 2023 were valued at \$2.4 billion. Top export markets for wine are the USA (\$870.5 million), United Kingdom (\$537.1 million), and Australia (\$443.7 million).
3. The arable industry's exports for the year ending 30 June 2023 were valued at \$272 million. Top export markets for arable are continental Europe (\$101 million) and Australia (\$30 million).

⁹ Export revenue figures for buttercup squash were only reported up to 2021/22 in FreshFacts 2023

Appendix Two: Key industry organisations in the horticulture sector

- Horticulture New Zealand (HortNZ) is the largest industry organisation representing the interest of nearly all New Zealand fruit and vegetable growers. It collects commodity levies which enables them to fund its industry-good activities. There are 20 product groups affiliated with HortNZ who represent the interests of their specific industry, and many of them collect their own commodity levy.

Horticulture New Zealand and affiliated product groups				
Organisation	Produce	Groups represented	Levy order	Notes
Horticulture New Zealand	Large variety of New Zealand Horticulture	Growers	Commodity Levies (Vegetables and Fruit) Order 2019	Levy expires April 2025
New Zealand Apple & Pears	Apples & Pears	Growers, packers and marketers	Commodity Levies (Apples and Pears) Order 2018	Levy expires January 2025
New Zealand Asparagus Council	Asparagus	Growers	Commodity Levies (Asparagus) Order 2018	Levy expires July 2024, 
New Zealand Avocado Growers Association	Avocado	Growers	Commodity Levies (Avocados) Order 2019	Levy expires June 2025
New Zealand Blackcurrants	Blackcurrants	Growers and marketers	Commodity Levies (Blackcurrants) Order 2019	Levy expires September 2025
Boysenberries New Zealand	Boysenberries	Growers	n/a	
New Zealand Buttercup Squash Council	Buttercup Squash	Growers, packers and marketers	n/a	
Citrus New Zealand	Citrus	Growers	Commodity Levies (Citrus Fruit) Order 2019	
New Zealand Feijoa Growers Association	Feijoa	Growers	Commodity Levies (Feijoas) Order 2020	
New Zealand Kiwiberry Growers	Kiwiberry	Growers	n/a	
New Zealand Kiwifruit Growers	Kiwifruit	Growers	Commodity Levies (Kiwifruit) Order 2017	Levy expires February 2024
Onions New Zealand	Onion	Growers and exporters	Commodity Levies (Onions) Order 2019	Levy expires May 2025

Passionfruit New Zealand	Passionfruit	Growers	<i>Commodity Levies (Passionfruit) Order 2020</i>	
New Zealand Persimmons	Persimmon	Growers and exporters	n/a	
Potatoes New Zealand	Potato	Growers, processors and traders	<i>Commodity Levies (Potatoes) Order 2019</i>	Levy expires June 2025
Process Vegetables New Zealand	Process Vegetables	Growers	<i>Commodity Levies (Process Vegetables) Order 2019</i>	Levy expires April 2025
Strawberry Growers New Zealand	Strawberry	Growers	<i>Commodity Levies (Strawberries) Order 2020</i>	
Summerfruit New Zealand	Summerfruit	Growers	<i>Commodity Levies (Summerfruit) Order 2020</i>	
Tamarillo New Zealand	Tamarillo	Growers	n/a	
Tomatoes New Zealand	Tomato	Growers	<i>Commodity Levies (Fresh Tomatoes) Order 2019</i>	Levy expires April 2025
Vegetables New Zealand	Vegetables	Growers	<i>Commodity Levies (Fresh Vegetables) Order 2019</i>	Levy expires April 2025

2. There are industry organisations with levies who are not affiliated with HortNZ, such as New Zealand Winegrowers the key representative body for the wine industry.

Commodity levy organisations not affiliated to Horticulture New Zealand				
Organisation	Produce	Groups represented	Levy order	Notes
Foundation for Arable Research Incorporated	Arable crops	Growers	<i>Commodity Levies (Arable Crops) Order 2018</i>	Levies expire July 2024
	Cereal silage		<i>Commodity Levies (Cereal Silage) Order 2018</i>	
	Maize		<i>Commodity Levies (Maize) Order 2018</i>	
Fruit Wine & Cider Makers Association of New Zealand Incorporated	Non-grape wine	Non-grape winemakers	<i>Wine (Non-grape Wine Levy) Order 2021*</i>	
Herbage Seedgrowers' Subsection of Federated Farmers	Herbage seed	Growers	<i>Commodity Levies (Non-proprietary and Uncertified Herbage Seeds) Order 2020</i>	
New Zealand Paeony Society Incorporated	Paeonies	Growers	<i>Commodity Levies (Paeonies) Order 2018</i>	Levy expires September 2024
New Zealand Grain & Seed Trade Association	Seeds and grains	Arable industry	n/a	A key organisation representing the arable

				industry (other arable industry bodies only represent specific parts or fulfil specific purposes).
New Zealand Winegrowers	Winegrapes	Growers and wineries	<i>Commodity Levies (Winegrapes) Order 2022</i>	
	Grape wine		<i>Wine (Grape Wine Levy) Order 2022*</i>	
United Wheatgrowers (NZ) Limited	Wheat	Growers	<i>Commodity Levies (Wheat Grain) Order 2020</i>	

*Note: These levies are made under the *Wine Act 2003*

Appendix Three: Upcoming decisions in the horticulture portfolio

Relevant legislation/regulation	Decision	Due date
<i>Commodity Levies Act 1990</i>	Submit the Kiwifruit Levy Order Cabinet paper to the Cabinet Office for consideration by Cabinet Legislation Committee	The paper needs to go to Cabinet prior to the Christmas/New Year holiday 2023
	Make a decision on progressing the making of three arable levy orders	January 2024
	Decisions to progress multiple levy orders	Throughout 2024 and dependent on when applications are submitted (see Appendix Two for when levy orders expire)
<i>New Zealand Horticulture Export Authority Act 1987</i>	Appoint three Board members nominated by industry to the New Zealand Horticulture Export Authority	2024
	Approve the terms of reference for a performance review and appoint a reviewer	Prior to 1 October 2024
<i>Kiwifruit Export Regulations 1999</i>	Appoint a Chair to the Board to Kiwifruit New Zealand	Decisions around May/June 2024 so that the appointment can be made by 1 October 2024

Appendix Four: Other legislation important to the horticulture sector

The following legislation play important roles for the horticulture sector but sit outside your portfolio. The lead Minister(s) are noted in brackets.

1. *Food Act 2014*: Provisions related to risk-based measures for achieving safety and suitability of food. (Lead Minister: Minister for Food Safety)
2. *Plant Variety Rights Act 2022*: Extends intellectual property rights for plant varieties that meet criteria. This incentivises the development of new plant varieties, providing benefits to the horticulture sector. (Lead Minister: Minister of Commerce and Consumer Affairs)
3. *Biosecurity Act 1993*: Enables the implementation of biosecurity measures on imported goods, and in response to incursions of pests, and established powers to be used to deal with biosecurity threats. (Lead Minister: Minister for Biosecurity)
4. *Resource Management Act 1991*: Forms New Zealand's resource management system, determining what activities are permitted, and managing use of natural and physical resources. Various regulations and standards such as National Policy Statements and National Environmental Standards sit under this Act. (Lead Ministers: Minister for the Environment; Minister Responsible for RMA Reform)
5. *Agricultural Compounds and Veterinary Medicines Act 1997*: Prevents or manages risks associated with the use of agricultural compounds, such as risks to public health, to trade in primary produce, to animal welfare and to agricultural security. (Lead Minister: Minister for Food Safety)
6. *Hazardous Substances and New Organisms Act 1996*: Intended to protect the environment, and the health and safety of people and communities by preventing or managing the adverse effects of hazardous substances and new organisms. The *Agricultural Compounds and Veterinary Medicines Act 1997* overlaps with the Act because a number of the compounds used in agriculture (such as pesticides) are also hazardous substances. (Lead Minister: Minister for the Environment)
7. *Organic Products and Production Act 2023*: The Act is legislative framework that enables any ministry to make organic standards and regulations for the products it is responsible for. MPI is developing standards and associated approvals and compliance regulations for making organic claims about food, beverages, and plant and animal products. (Lead Minister: Minister of Agriculture).

Proactively Released



GROWING TOGETHER 2035

Aotearoa Horticulture
Action Plan - Strategy

February 2023



FOREWORD

The Aotearoa Horticulture Action Plan has been developed by industry, Māori, research providers and government to ensure the commercial horticulture sector meets its target of increasing grower returns and achieving \$12 billion in revenue by 2035.

For the industry to achieve this target, as well as respond to climate change and maintain its social licence, it needs to have clear and agreed outcomes and goals, and associated actions and resources.

Aotearoa New Zealand's commercial horticulture sector feeds New Zealanders and makes a major contribution to the national economy, regional economies and communities. It's a significant export earner, returning more than \$6 billion annually in total farmgate sales.

This proud position is the result of decades of focus, investment and hard work. The Aotearoa Horticulture Action Plan builds on previous success while being conscious that post-Covid-19, the world has changed. Tomorrow's marketplace will present new challenges, and tomorrow's consumers will have different and more exacting requirements.

Innovation and commercialisation to deliver the transformation that will be needed takes time. A lot of the horticulture industry's success today was first thought about at least a decade ago. That is why this Action Plan focuses on action and associated investment for the next decade, across five critical outcome areas:

- Grow sustainably
- Optimise value
- Māori are strong in horticulture
- Underpinned by science and knowledge
- Nurture people.

This Action Plan will be kept alive and on target via regular review and fine-tuning.

It will only be successful if everyone gets behind it and we all focus on the targets and actions, for the good of the whole industry.

That is our challenge to you.



The Aotearoa Horticulture Action Plan aims to **increase grower returns and achieve \$12 billion in revenue by 2035**

INTRODUCTION

The Aotearoa Horticulture Action Plan sets up a framework for collaboration across industry, Māori, research providers and government to ensure alignment, leverage activity and, most of all, achieve progress through a series of united actions to grow Aotearoa New Zealand's horticulture sector sustainably.

We acknowledge that to achieve aspirational aims, we need to have actions in place to address some of the current challenges. These actions will be tracked from the current baseline to drive progress towards solutions across the industry.

The scope of the Action Plan is 'food for people' (fresh and processed). It covers fruit, vegetables and nuts across the whole supply chain, and both domestic and export markets. It excludes forestry, wine, floriculture and 'arable for livestock feed' sectors.



The Aotearoa Horticulture Action Plan sets up a **framework for collaboration**

Background

The Action Plan has evolved from previous work developed by both industry and government, including the 'Horticulture Post-COVID Recovery Strategy' and 'Fit for a Better World'. It reflects feedback provided by a diverse range of stakeholders.

The development of this Action Plan has been overseen by a Governance Group providing diverse representation. Members included Andrew Gibbs (Chair); Nadine Tunley, Horticulture New Zealand; David Hughes, The New Zealand Institute for Plant & Food Research Ltd; Andrew Keaney, Grow the Grower Ltd; Liz Te Amo, Miro; Nick Roskrige, Massey University; Kevin Wilcox, AS Wilcox; Carol Ward, Zespri; Steve Penno and Julie Collins/Alastair Cameron, Ministry for Primary Industries.



How will the Action Plan work?

The Action Plan has three aligned elements:



This document, the strategy element, provides the overarching framework, which sets the outcome areas, priorities and activities needed to reach the targets. All the partners will need to work together if we are to deliver on this strategy.

Next steps

The **annual implementation plan** will set out the actions needed to achieve the targets, which will be tracked, reviewed and updated annually. Underpinning this will be an **investment roadmap**, which will estimate the level of investment needed to enable progress towards the overall target of doubling horticulture revenue to \$12 billion by 2035 prosperously and sustainably.

Governance - who will oversee the Action Plan?

A new Governance Group will be established to oversee the operationalisation of the Action Plan with a representative from each of the four partners (industry, Māori, research providers and government), along with an independent chair. The members of this Governance Group will be confirmed in the first quarter of the work programme.

INDUSTRY AT A GLANCE

Current state



\$6 B

in annual sales



40,000+

in regional jobs



3700

growers use assurance
programmes (NZGAP,
GlobalG.A.P.)



12

horticulture partners
in GIA biosecurity
agreements



5500

commercial growers

Growing at a glance



CURRENT OPPORTUNITIES AND CHALLENGES

Te Taiao: protecting the quality of the natural environment for future generations is at the heart of New Zealand's horticulture sector. Our growers are innovative, committed and hardworking individuals who take pride in minimising impacts on the environment.

Mātauranga Māori: Māori representation in horticulture has grown in the past decade and this growth is expected to continue, with many iwi and Māori collectives planning expansions. Celebrating Māori culture and its values and embracing indigenous concepts relating to kai and its production is a key opportunity for growth and diversity.

The Aotearoa New Zealand Brand (NZ Inc.): Aotearoa New Zealand benefits from a 'clean and green' reputation with high standards of food safety and guardianship of the land.

Counter seasonality: the summer export season in Aotearoa New Zealand enables our produce to reach the northern hemisphere during winter, allowing us to meet market demand.

Leading cultivars: we have a strong history of developing and introducing new cultivars successfully to market.

Innovation: as a small, diverse and nimble sector, we have the ability to problem-solve and develop solutions-based technology and automation to benefit the wider sector, and package our services to the world.

Growing systems: horticulture has led the world in the way we grow some crops, such as apples, using efficient and effective systems to improve productivity, yield and quality.

OPPORTUNITIES

Climate change: we are facing an environment where new growing techniques, practices and regions are needed in order to maintain domestic food supply and have a viable export industry under a changing climate.

Labour availability: the world is experiencing a shortage of labour. This situation is being compounded by changing attitudes to and expectations about work. Our industry will need to adapt and become more attractive if it is to maintain competitiveness in this environment, and ensure fair pay and conditions for fair work.

Consumer expectations: the consumers of tomorrow will be demanding. They will want to know how their food has been grown, picked, packed and transported. Consumers' perceptions about the sustainability credentials of food products and the growing systems that produce them are key drivers of their purchasing behaviours. Domestic consumers expect reliable supply of produce at an affordable price.

Policy settings: our industry needs policy settings that align and enable growers to do what they do best: invest into, develop, grow and market healthy nutritious food in a sustainable manner.

Access to capital: significant capital is needed to future-proof horticulture businesses. This requires government support and an attractive return.

Enabling a diverse industry: our industry comprises large and small businesses, those targeting export or domestic markets, new growers to inter-generational growers, fruit and vegetable crops and significant regional variation. In many instances regional solutions are required for regional issues.

Economic sustainability: for horticulture businesses to be enduring, they must be financially viable.

CHALLENGES

SECTOR TRANSFORMATION

As climate changes, the horticulture industry must adapt, grow sustainably, and deliver value for consumers and growers through healthy produce. Horticulture is well placed to be part of the solution for Aotearoa New Zealand.

Vision

Aotearoa New Zealand is synonymous with world-leading healthy produce, which is grown with care for people and place, and is enjoyed by consumers around the world.

Goal

Double the farmgate value of horticulture production from \$6 B to \$12 B by 2035, in a way that improves prosperity for our people and protects our environment.

Sustainable growth pathway

Look after our environment

Maximise value

Optimise productivity

Accelerate innovation

Stronger Māori participation

Great committed people

Outcomes



Grow sustainably: Horticulture is in balance with the environment and lessens climate change



Optimise value: Domestic and export market and consumer needs are understood, and the value chain optimised for demand



Māori are strong in horticulture: Partner with Māori to triple participation in high-value* horticulture



Underpinned by science and knowledge: A strong research and development programme and consideration of Mātauranga Māori enables, accelerates and supports horticulture



Nurture people: Horticulture attracts and retains people, and annual and seasonal workforce needs are met

*Value is defined as high monetary return to growers and/or societal value, e.g. domestic food supply.

EXPLANATORY NOTES

What are Tier 1, 2 and 3 crops?

Tier 1: generate close to or over \$1 B annual FOB value (large, sophisticated, world-leading, with strong integrated pest management and proprietary cultivars, etc.)

Tier 2: generate more than \$100 M annual FOB value (have some of the above attributes, but not all)

Tier 3: generate less than \$100 M annual FOB value (emerging and small-scale crops)

The quadruple helix

This strategy builds on collaboration between industry, government, Māori and research. While there are outcome areas dedicated to Māori and science, these two important elements of the quadruple helix are interwoven throughout the strategy.

Why are the key priorities numbered?

Many priorities were identified as the strategy was developed. A survey was conducted of a range of stakeholders to identify priorities that the collective considered the most important. The numbers indicate their priority order under each outcome area.

Why do some key priority areas have other outcome symbols?

Many of the key outcome areas are interlinked. These linkages have been highlighted with the relevant symbol:



Grow sustainably



Optimise value



Māori are strong in horticulture



Underpinned by science and knowledge



Nurture people

A by Māori for Māori approach

Horticulture has long been a part of the Māori economy. It is estimated around five percent of the horticulture land in New Zealand is operated by Māori authorities, organisations and individuals¹. Māori participation and ownership of assets in the horticulture sector is set to grow. Horticulture presents significant opportunities for Māori economic development and as kaitiaki of the land. Māori are kaitiaki of their whenua, leaders in their communities, landowners and business owners. The Action Plan supports Māori-led approaches to enable the growth of the Māori horticulture sector. It will also provide economic and employment opportunities for Māori.

1. www.tpk.govt.nz/en/o-matou-mohiotanga/whenua/maori-in-horticulture-2020-research-report



OUTCOME AREA 1: GROW SUSTAINABLY

Improving sustainability and mitigating climate change

KEY PRIORITY 1.1: ADOPT OPTIMISED AND ENVIRONMENTALLY POSITIVE GROWING PRACTICES



Crops and management systems are optimised for productivity, value, and sustainability

The Challenge: There have been significant efforts to improve sustainability of the sector, but more can be done. For best practice to be embedded across horticulture, science, knowledge, and tools need to be rolled out and accessible to all.

Actions	Outcomes
- Develop suitable decision-support tools and frameworks for best practice nutrient management by crop. - Ensure extension and training programmes are in place to meet regional needs.	Growers are practising integrated farm planning for managing fresh water, climate change and biodiversity.
- Scan global optimal crop production systems and review their potential for feasible application in New Zealand. - Coordinate research on nutrient demand and losses across all crops and growing systems.	New Zealand sectors are using the most productive management systems to optimise yield and desirable traits, and minimise environmental effects.
Understand waste value streams.	Horticulture crop and packaging waste is minimised and waste value streams optimised.

KEY PRIORITY 1.2: ENSURE WATER RESILIENCE (AVAILABILITY & STORAGE)



An abundance of well-managed water is available to grow crops in all regions, within the context of Te Mana o te Wai

The Challenge: Water is a critical resource for growing, and water allocation can be difficult with competing priorities and inadequate water storage. With climate change, access to water for horticulture production is likely to become more challenging in some regions.

Actions	Outcomes
Model future water needs by region, crop and growing system (including Māori land and isolated rural communities).	Expected climate change effects on water availability and crops out to 2035 are better understood by region.
Map strategic water infrastructure investments for climate change adaptation.	Co-investment in regional water storage and infrastructure is evidence-based.



KEY PRIORITY 1.3: INCREASE CROP PROTECTION, MANAGEMENT AND BIOSECURITY TOOLS

Globally approved sustainable chemistry and integrated crop protection tools and practices enhance our production, taonga and way of life

The Challenge: Growers in New Zealand currently struggle to access new biological and chemical tools in a timely manner for crop protection and biosecurity use, resulting in limited options, decreased efficacy, and over-reliance on single modes of action.

Actions	Outcomes
Identify fundamental science needs for use by regulators to globally harmonise crop protection tools and data.	New Zealand regulatory systems are globally harmonised so growers have access to the best crop protection tools and practices.
Create a prioritised pathway plan (including data and trial needs) to identify new tools for use in New Zealand and support collaborative crop management initiatives.	The right crop protection tools are used at the right time, with the right method.



KEY PRIORITY 1.4: SUPPORT HORTICULTURE WITH SOUND POLICY

The horticulture sector is enabled to succeed into the future

The Challenge: Clear direction setting and long-term policy are needed from the government if existing horticulture businesses and new entrants are to have the confidence to invest in and grow the sector.

Actions	Outcomes
- Maximise use of existing industry and global assurance schemes that reduce the compliance burden and achieve outcomes for social, economic, environmental and cultural wellbeing. - Develop nationally consistent regulation for some aspects of horticulture through national direction (e.g. national environmental standards and national planning standards).	Policy settings enable horticulture to thrive and attract new entrants, utilise accepted industry programmes and are well understood by all parties.
- Set up a programme to increase knowledge of the horticulture sector and policy between government officials and the sector. - Identify where policy could enable the horticulture sector, where it is adversely affecting the sector and investigate options for policy review.	There is a clear understanding of the horticulture sector's challenges and opportunities, with industry and government working together to design enabling policy settings.



KEY PRIORITY 1.5: TRANSITION TO A LOW-EMISSIONS ECONOMY

Reduction plans target investment in key carbon-emitting areas

The Challenge: While it is recognised that some of our growing practices need to change if horticulture is to play its part in reaching climate change targets, there are significant financial and technological barriers holding back the transition to improved systems.

Actions	Outcomes
Develop and agree on a horticulture sector roadmap for transition to net zero carbon by 2050.	The horticulture sector supports the New Zealand economy to achieve climate change targets.
Trial mitigations for reducing emissions from crop residues and cultivation.	There is investment in emission-lowering technologies and research for crops and cultivation.
Identify energy-intensive areas of the horticulture value chain and support conversion to systems that reduce greenhouse gas emissions.	Financial structures support conversion to higher productivity and lower input/emission systems.



KEY PRIORITY 1.6: OPTIMISE LAND-USE ADAPTATION

Maximise appropriate conversion to horticulture crops as part of informed land use and protection of biodiversity

The Challenge: Appropriate use of our finite land resource must be well thought out, rather than piecemeal, if we are to produce food sustainably into the future.

Actions	Outcomes
Develop an adaptation blueprint by region and crop to test policy settings and ensure they enable the right crops to be grown in the right places to meet expected future demand (domestic & export).	Settings allow the right crops to be grown in the right places to maximise profitability, environmental care, food security and climate adaptation and mitigation.





OUTCOME AREA 2: OPTIMISE VALUE

Domestic and export market and consumer needs are understood, data is well utilised, and the value chain is optimised for demand

KEY PRIORITY 2.1: DIVERSIFY MARKET ACCESS AND FACILITATE TRADE

Product groups and businesses are supported to develop market and trade strategies that maximise market returns

The Challenge: It is difficult for smaller product groups and emerging crops to develop thorough export and domestic market plans and meet market protocols due to lack of funding and resourcing, and lengthy timelines. In addition, current market access opportunities are not fully utilised because growers are not getting the premium needed in market to meet the costs involved.

Actions	Outcomes
- Establish collective resources and expertise (technical and market information) to support market access requests. - Build a mechanism that brings industry, Māori, and science together with government to co-design proactive and transparent market access work programme.	Market access opportunities (both existing and new) are maximised, importing country requirements are well understood, and outcomes with partner countries are fully leveraged and mutually beneficial.
Develop and distribute collective market and consumer insight resources by key country and crop/product group to accelerate their approach to market.	Effective market penetration plans are supported and in place for a diverse range of crops and businesses, targeted to the market and consumers.
- Māori leverage existing international arrangements, international forums and trade agreements to increase Māori trade. - Grow Indigenous to Indigenous information exchange as part of international trade.	Māori trade is increased through leveraging international arrangements and trade agreements

KEY PRIORITY 2.2: BUILD THE DOMESTIC MARKET

Tell the Aotearoa New Zealand horticulture story to promote increased consumption of fruit and vegetables and support our social licence to grow

The Challenge: Statistics show fruit and vegetable consumption is trending down, and the benefits to New Zealanders of eating locally grown produce are not widely understood or appreciated.

Actions	Outcomes
- Review consumer drivers and barriers to consuming fruit and vegetables to understand information gaps and map areas for intervention and collaboration. - Increase education on the use of health and nutrition claims in horticulture.	Health and nutrition benefits are known and support an increase in vegetable and fruit consumption.
- Undertake a New Zealand fruit and vegetable food security review. - Support initiatives to ensure Māori food sovereignty.	New Zealanders have a food-secure future and Aotearoa New Zealand is treated as a key market by growers.
Develop partnerships for enhanced promotion and a consumer-centric campaign to promote Aotearoa New Zealand's horticulture story and benefits.	Consumers understand the Aotearoa New Zealand horticulture story, strongly value the contribution of growers and actively seek out locally grown produce.

KEY PRIORITY 2.3: OPTIMISE PRODUCTION AND VALUE CHAIN INNOVATION



Improve technology and practices for premium supply chain and high-quality produce to market

The Challenge: A lot of New Zealand's horticulture sector is supply chain (commodity) based, which does not maximise competitive advantages to secure premium pricing in market.

Actions	Outcomes
Map existing supply chains and infrastructure by region to identify key intervention points for co-investment and potential use of cooperative models for the horticulture sector.	Supply chain to retail market is optimised through successful collaboration systems that achieve critical volumes, reduce duplication across and within regions, and lower costs and emissions.
Use a technology stack approach to review the competitive position of Tier 2 sectors to ensure product quality standards, harvest and post-harvest protocols and techniques are in place.	Tier 2 crops meet requirements to successfully compete in the market, reducing product loss and improving quality for better consumer outcomes.

KEY PRIORITY 2.4: UTILISE DIGITAL TOOLS AND DATA SHARING



Secure data storage and system integration

The Challenge: Horticulture systems need to have standardised and integrated data to reduce duplication and costs, increase efficiency and optimise use of data and digital tools.

Actions	Outcomes
- Establish horticulture data sharing standards and policies that enable data integration, whilst protecting data sovereignty. - Establish an online data library to share horticulture information.	Data can be inputted once and used with permission by multiple parties in multiple ways to support informed decision making and increased compliance.





OUTCOME AREA 3: MĀORI ARE STRONG IN HORTICULTURE

Māori participation in high-value horticulture triples by 2035

This outcome area is focused on building Māori-led participation in the sector. Delivering the activities identified across all five outcome areas will support that aspiration.

KEY PRIORITY 3.1: INCREASE MĀORI WORKFORCE PARTICIPATION, TRAINING AND QUALIFICATIONS



A greater proportion of skilled and highly skilled roles are filled by Māori

The Challenge: For horticulture to be an attractive career choice for Māori (including rangatahi), opportunities for building capability and entry into highly skilled roles within the sector must be available and supported.

Actions	Outcomes
Link regional education providers with iwi development plans and industry.	Increased numbers of Māori hold horticulture qualifications.
Develop a Māori Horticulture Workforce Transition model that is aligned with the Horticulture Workforce Transition Plan² utilising a by Māori for Māori approach.	Māori workforce participation in skilled roles is increased nationally.
- Promote horticulture in kura, wānanga and communities. - Support Māori-led apprenticeship and cadet programmes, training, and employment opportunities into higher value roles within horticulture entities.	Horticulture is seen by Māori as a desirable sector to build a career in and career pathways are widely available.

KEY PRIORITY 3.2: INCREASE MĀORI-OWNED LAND IN HIGH-VALUE HORTICULTURE



Enable conversion of Māori land to cultivation of crops that are suitable for the region and site, along with supporting opportunities for new Māori owned access

The Challenge: There is Māori-owned land suitable for development into high-value horticulture, but it has not yet been utilised for this purpose. For areas planted in horticulture crops on Māori land to significantly increase, more accessible and accurate advisory resources and services are needed to provide confidence to convert.

Actions	Outcomes
- Develop pathways for Māori to confidently convert their land to horticulture using digital technology and provide in-person guidance for assessing land suitability. - Streamline the provision of regional advisory services offered by MPI and other providers so Māori can access advice on a range of land uses and issues from a source that best fits their needs.	A greater proportion of Māori-owned land is developed into high-value sustainable horticulture for domestic and export markets.
Connect to the 'Taiao Ora Tangata Ora³' work from 'Fit for a Better World' to develop pathways that enable the regeneration and wellbeing of Te Taiao (the natural world) in horticulture.	New Māori-owned and led investment opportunities are created, and market value increased, through strategic policy development that enables Māori to exercise rangatiratanga and kaitiakitanga over their land.

2. www.productivity.govt.nz/assets/Submission-Documents/immigration-settings/DR-147-NZ-Apples-and-Pears-Incorporated-Horticulture-New-Zealand-Incorporated-Attachment-2.pdf

3. https://fitforabetterworld.org.nz/assets/TE_TAILO_REPORT_WEB.pdf

KEY PRIORITY 3.3: ACCESS CAPITAL FOR INVESTMENT IN MĀORI-OWNED HORTICULTURE

Ensure options that support large and small Māori entities to develop and thrive

The Challenge: Māori are uniquely positioned to convert the challenges ahead into opportunities, provided there is access to the financial resources needed to do so.

Actions	Outcomes
- Support improved Māori access to capital for investment into horticulture. - Develop a support platform for post-settlement entities and small land trusts who wish to invest in horticulture.	Māori are accessing capital for horticulture investment and there are more Māori owned and led successful horticulture businesses.



KEY PRIORITY 3.4: SUPPORT GREATER MĀORI OWNERSHIP AND CONTROL ACROSS THE WHOLE VALUE CHAIN



Increase sustainable business returns and Māori brand stories

The Challenge: Growing Māori presence and influence across the entire supply and value chain (including processing, export, vertical integration and branding) presents an opportunity to increase sustainable returns for Māori entities and economic development.

Actions	Outcomes
- Communicate Māori-led success stories around indigenous horticulture production that are linked to intergenerational sustainability. - Facilitate the development of opportunities created by trade agreements that reflect Māori aspirations. - Support Māori to build scale in their horticulture activities for commercial viability and economic development. - Support the fusion of commercial governance skills and Mātauranga Māori through training and other knowledge-sharing activities to build connections and capability.	The number and profitability of Māori-owned horticulture businesses have increased, as have Māori horticulture exports. Māori recognise the opportunity horticulture presents and are well connected.

KEY PRIORITY 3.5: DEVELOP AND PROTECT UNIQUE INDIGENOUS HORTICULTURE



Progress the development and protection of unique indigenous horticulture (taonga species) by Māori

The Challenge: It is critical that development and utilisation of taonga species are driven by Māori with appropriate protection and controls.

Actions	Outcomes
- Assess the climate-resilience of taonga horticulture species and design systems to support their development in future environments. - Utilise the outcomes of the Plant Variety Rights Act (1987) legal frameworks to enable the protection and development of taonga species. - Develop pathways to support the development of cultivars from taonga species.	Unique indigenous horticulture (taonga species) by Māori is growing, including through iwi-led development of indigenous cultivars.
Establish protocols for the use of Māori data and deliver training about appropriate use of information and data.	Information about taonga species is being retained, disseminated and used appropriately.





OUTCOME AREA 4: UNDERPINNED BY SCIENCE AND KNOWLEDGE

A strong research and development programme and consideration of Mātauranga Māori⁴ enables, accelerates and supports horticulture

KEY PRIORITY 4.1: CATAPULT TIER 2 CROPS TO A WORLD-LEADING POSITION

Build the scale needed for Tier 2 crops to become dominant in their category globally within 15 years

The Challenge: Many New Zealand crops currently generate around \$100 M in returns per annum but have the potential to become bigger contributors to New Zealand's GDP, like our heavy-lifting Tier 1 crops (\$1 B per annum). Their growth is currently constrained by gaps in their technology tool kits, a low level of investment across the value chain and other factors.

Actions	Outcomes
- Develop a set of solutions (technology stack) for each Tier 2 crop to build the scale needed. - Develop an appropriate investment mechanism to support this approach. - Establish suitable governance structures, intellectual property arrangements and collaborations to enable the development of Tier 2 crops.	Tier 2 crops have a pathway to sustainable growth (including investment and integration of activities), increasing their global footprint, category dominance and returns.



KEY PRIORITY 4.2: OPTIMISE USE OF AGRITECH ACROSS NEW ZEALAND'S HORTICULTURE SECTOR

Have access to suitable technology and tools to improve consistent and sustainable practices, reduce costs and add value

The Challenge: Production systems for some New Zealand horticulture crops would benefit from increased investment in and access to leading-edge technologies. These include automation, artificial intelligence and sensing technologies that will improve the sustainability and productivity of food systems.

Actions	Outcomes
Work with local and international technology organisations to build a strong agritech sector.	The agritech sector is collaborating with New Zealand's horticulture sector to increase access to technologies and tools that improve efficiency and support decision making.
- Support the attraction, training and retention of specialised staff with innovation expertise across key government agencies. - Align policy settings, incentives and government support to encourage investment in and use of agritech and automation.	Policy settings are enabling the development and early adoption of new and emerging production technologies and tools.



4. Utilising Mātauranga Māori and conventional science to enable better te taiao outcomes for whenua (healthy lands and soils), wai (thriving waterways), āhurangi (climate resilience and zero carbon), koiora (people and animal wellbeing) is covered across all five outcome areas.

KEY PRIORITY 4.3: BREED CULTIVARS THAT MEET FUTURE GROWING NEEDS



Develop high value and disease-resistant New Zealand proprietary cultivars to build resilience into New Zealand's food system and meet overseas needs, whilst protecting intellectual property

The Challenge: Lack of access to germplasm to accelerate New Zealand breeding programmes constrains the pace of cultivar development. Opportunities exist to capitalise on new and emerging technologies to fast-track cultivar generation, and support Māori to explore high value uses of taonga species.

Actions	Outcomes
Ensure a robust, timely and cost-effective germplasm import pathway.	Improved access to high quality, pest-free germplasm material imported into New Zealand has increased confidence to invest in breeding programmes.
- Review the current landscape for cultivar development and identify opportunities for new programmes or collaborations with international programmes to fill gaps. - Lead formal discussion on the role of advanced breeding techniques (e.g. gene technologies) to speed innovation.	Genetic material is being leveraged for maximum global value.
Transition cultivars to new production systems, such as vertical farming/urban farming production platforms.	New Zealand's existing cultivars grown in new production platforms are meeting global demand.

KEY PRIORITY 4.4: SECURE NEW ZEALAND'S FUTURE GLOBAL COMPETITIVE POSITION FOR TIER 1 CROPS



Ensure that New Zealand leads in new technology and development domains for Tier 1 crops

The Challenge: New Zealand growers of Tier 1 crops need tools, technologies and knowledge to accelerate their performance even further and differentiate their products in increasingly demanding global markets.

Actions	Outcomes
Identify next horizon technology and innovation priorities for Tier 1 crops.	Areas for technology development have been identified, roadmaps constructed, and investment secured to position Tier 1 crops for global success.
Map the process for qualifying relevant stand-out marketable attributes (e.g. nutritional, sustainability claims), including examples of requirements, typical costs and regulatory pathways.	Stand-out attributes are differentiating Tier 1 crops in global markets.
Create digital twins (from individual plants to area levels, e.g. digital orchards) to allow rapid <i>in silico</i> experimentation and the development of artificial intelligence management tools.	Emerging digital technologies have been applied to accelerate innovation in Tier 1 crops.

KEY PRIORITY 4.5: SUPPORT THE RAPID AND EFFECTIVE ESTABLISHMENT OF TIER 3 CROPS



Develop programmes to accelerate the performance and scale of Tier 3 crops at a regional level

The Challenge: There is considerable potential for the development of Tier 3 crops that currently generate less than \$100 M in export returns per annum, but that can make a significant contribution to regional growth and development. Coordinating and promoting early-stage crops in the regions will lift economic activity and support community resilience.

Actions

- Design, fund and establish programmes to accelerate opportunities and address challenges for Tier 3 crops.

Outcomes

Regional programmes are accelerating the development of Tier 3 crops.





OUTCOME AREA 5: NURTURE PEOPLE

Horticulture attracts, retains and grows great people

KEY PRIORITY 5.1: ESTABLISH A COORDINATED CAPABILITY FRAMEWORK FOR HORTICULTURE ACROSS AOTEAROA NEW ZEALAND

Develop plans to attract and retain great people and build our workforce

The Challenge: Horticulture is currently facing a major labour shortage. A coordinated and collaborative approach across the food and fibre sector is needed to ensure we attract and retain great people now and into the future.

Actions	Outcomes
• Create a workforce transition plan that delivers on seasonal, permanent, regional, and national workforce needs, and increases Māori participation in highly skilled horticulture roles. • Integrate a school and tertiary horticulture programme pipeline within the New Zealand education system.	Horticulture attracts, retains and grows great people through attractive working conditions, accessible opportunities for all and training that meets people's needs.
• Enable strong collaboration between sectors, regions and industries to contribute to a permanent workforce. • Actively promote horticulture as a career choice and ensure regional industry training needs are well understood and communicated to all stakeholders.	A higher proportion of permanent workers are utilised - supported by automation.



KEY PRIORITY 5.2: ENABLE RIGHT PERSON, RIGHT PLACE

Establish policy settings and legislation to meet labour needs

The Challenge: There is a need to ensure current policy settings and employment legislation move to a longer term focus to enable the industry to progress and plan for the future with certainty and give investors confidence in the policy settings.

Actions	Outcomes
• Create a descriptive and enduring horticulture policy work programme with timelines and realistic deliverables. • Build suitable flexibility into policy and legislation to provide workers with more options for full employment in their region and enable people to work across industry.	Government understands horticulture's diverse needs and prioritises policy that builds confidence in the stability of the current and future workforce and enables people to thrive.
• Review the Recognised Seasonal Employer scheme with a long-term lens to address any issues and provide certainty of settings for this vital programme.	The Recognised Seasonal Employer scheme is fit for purpose and beneficial for all involved.
• Start a targeted and ongoing campaign to promote New Zealand horticulture jobs for holiday visa applicants, and enable seasonal visas for counter-seasonal work options.	Employment options are enabled for seasonal peak management and counter-seasonal work.

KEY PRIORITY 5.3: BUILD A RESPONSIBLE AND ATTRACTIVE INDUSTRY

Horticulture is an ethical industry that people want to be part of

The Challenge: If the horticulture sector is to attract and retain the workforce it needs, the sector must demonstrate it is a good employer and a fulfilling, rewarding career choice.

Actions	Outcomes
Promote social practice initiatives in markets and embed these into horticulture business practices.	Horticulture is an attractive and ethical industry with fair pay conditions, accessible opportunities and an excellent culture in which individuals thrive.
Ensure resilience support tools are working, utilised and accessible where needed.	Support for growers is available to reduce stresses associated with horticulture businesses.



KEY PRIORITY 5.4: SUPPORT DIVERSITY AND DEVELOPMENT

The diverse ethnicities, backgrounds and aspirations of those in horticulture are welcomed and fostered

The Challenge: The current makeup of horticulture's grower and workforce community is very diverse, which is a significant strength of the sector. This diversity needs to be fostered, celebrated and enabled in all aspects of the sector - from the field to the boardroom.

Actions	Outcomes
Provide opportunities for those in the sector to meet with, learn from, and celebrate each other - diverse cultures; young with old; incorporating Mātauranga Māori alongside conventional science.	Horticulture attracts and celebrates a diverse workforce with a varied skill set.
- Support leaders with a strong programme of mentoring and development. - Provide career paths for future generations /rangatahi.	Ongoing development of our leaders.
Ensure that legal and financial planning assistance for succession planning is available.	Businesses are supported to stay in horticulture where appropriate and to move out when it is not right for them.

ALIGNMENT OF THE STRATEGY

Alignment with the 'Fit for a Better World' roadmap



Productivity | Whaihua

Target: Adding **\$44 B** in export earnings over the next decade through a focus on creating value.

Outcome area 1

- 1.4: Support horticulture with sound policy
- 1.6: Optimise land-use adaptation

Outcome area 2

- 2.1: Diversify market access and facilitate trade
- 2.3: Optimise production and value chain innovation

Outcome area 3

- 3.2: Increase Māori-owned land in high-value horticulture
- 3.3: Access capital for investment in Māori-owned horticulture

Outcome area 4

- 4.1: Catapult Tier 2 crops to a world-leading position
- 4.4: Secure New Zealand's future global competitive position for Tier 1 crops
- 4.5: Support the rapid and effective establishment of Tier 3 crops



Sustainability | Kauneke Tauwhiro

Target: Reducing biogenic methane emissions to **24-47 percent** below 2017 levels by 2050 and 10 percent below by 2030. Plus, restoring New Zealand's freshwater environments to a healthy state within a generation.

Outcome area 1

- 1.1: Adopt optimised and environmentally positive growing practices
- 1.2: Ensure water resilience (availability and storage)
- 1.3: Increase crop protection, management and biosecurity tools
- 1.5: Transition to a low-emissions economy

Outcome area 3

- 3.5: Develop and protect unique indigenous horticulture

Outcome area 4

- 4.2: Optimise use of agritech across New Zealand's horticulture sector
- 4.3: Breed cultivars that meet future growing needs



Inclusivity | Whakaurutia

Target: Employing **10 percent** more New Zealanders by 2030, and 10,000 more New Zealanders in the food and fibre sector workforce over the next four years.

Outcome area 2

- 2.2: Build the domestic market
- 2.4: Utilise digital tools and data sharing

Outcome area 3

- 3.1: Increase Māori workforce participation, training and qualifications
- 3.4: Support greater Māori ownership and control of across the whole value chain

Outcome area 5

- 5.1: Establish a coordinated capability framework for horticulture across Aotearoa New Zealand
- 5.2: Enable right person, right place
- 5.3: Build a responsible and attractive industry
- 5.4: Support diversity and development

Alignment with the United Nations Sustainable Development Goals

Aspects of the Action Plan – strategy align with 10 of the 17 United Nations Sustainable Development Goals.

 2 ZERO HUNGER End hunger, achieve food security and improved nutrition and promote sustainable agriculture.	 3 GOOD HEALTH AND WELL-BEING Ensure healthy lives and promote well-being for all at all ages.	 6 CLEAN WATER AND SANITATION Ensure availability and sustainable management of water and sanitation for all.	 7 AFFORDABLE AND CLEAN ENERGY Ensure access to affordable, reliable, sustainable and modern energy for all.	 8 DECENT WORK AND ECONOMIC GROWTH Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.
 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation.	 11 SUSTAINABLE CITIES AND COMMUNITIES Make cities and human settlements inclusive, safe, resilient and sustainable.	 12 RESPONSIBLE CONSUMPTION AND PRODUCTION Ensure sustainable consumption and production patterns.	 13 CLIMATE ACTION Take urgent action to combat climate change and its impacts.	 15 LIFE ON LAND Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably managed forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.

Proactively Released

Appendix Six: List of horticulture Sustainable Food and Fibre Futures projects

Name	Number of Years	MPI Amount	Total Project Value
Feasibility of organic no tillage commercial vegetable production systems in the Manawatu	4	\$89,369.00	\$249,989.00
MA - Wairoa Hort Cluster 2	2	\$200,000.00	\$240,000.00
MA - Wairoa Hort Cluster	2	\$200,000.00	\$240,000.00
MA - Tuwharetoa Collective	2	\$648,500.00	\$788,500.00
MA - Tupuaanuku Māori Horticulture	2	\$945,000.00	\$1,134,000.00
Beyond Carbon Zero	2	\$707,360.00	\$1,768,401.00
Creating Best Practice Guidelines to reduce Kiwi Fruit losses	2	\$78,000.00	\$164,201.00
Multi-region pilot testing of urban farm growing of 'out of season' spray free strawberries	2	\$921,162.00	\$2,302,905.00
AT - Development of an autonomous low emissions tractor for trellised orchard systems	3	\$622,360.00	\$1,557,900.00
Precision Weeding with a Smart Waterjet Weeder, not Chemicals or Cultivation	2	\$140,000.00	\$234,000.00
Best Practice Management of Nitrates in Process Cropping	2	\$105,782.00	\$192,330.00
HP - Feasibility of growing Hi-Oleic peanuts in Northland	2	\$698,750.00	\$997,750.00
Electric Horticulture Sprayer	1	\$37,198.00	\$92,995.00
Vineyard-scale monitoring of unproductive vines	2	\$534,333.00	\$1,335,833.00
Branching Out Phase 2: Practical Implementation of Food and Fibre Value Chain Diversification	3	\$975,000.00	\$2,175,815.00
Biodegradable Bio-Based Plastic Nursery Containers	1	\$98,600.00	\$245,000.00
The good bugs - enhancing pollination and natural enemies in New Zealand	3	\$160,000.00	\$400,004.42
MA - Miro	5	\$1,600,000.00	\$3,756,280.00
Sustainable Intensive Produce Farming	3	\$869,700.00	\$2,156,200.00
AT - Bio-security incursions in the primary sector	3	\$4,000,000.00	\$9,950,000.00
A Lighter Touch (Hort NZ)	7	\$10,829,252.00	\$27,073,129.00
Brewing Success	7	\$5,300,000.00	\$13,245,905.00
Greengrower	3	\$3,530,000.00	\$8,825,000.00
Sauvignon Blanc 2.0	7	\$7,480,901.00	\$18,702,252.00
Botrytis Disease Management in Tunnel House Blueberries	3	\$87,500.00	\$262,500.00
Global Food Safety Initiative (GFSI) recognition of NZGAP	1	\$54,400.00	\$150,500.00

HP - Kabocha Innovation Project #2	1	\$180,156.50	\$450,391.26
Cone Dryer/Tumbler	3	\$80,000.00	\$160,000.00
Supporting Otago South Catchment Groups to Improve Ecosystem Health	3	\$1,804,977.00	\$3,474,176.49
HP - Autonomous Robotic Asparagus Harvester (ARAH)	4	\$2,600,000.00	\$5,827,670.00
RF - Carbon Positive – Regenerating soil carbon in soils used for intensive field cropping	6	\$2,118,857.00	\$3,026,857.00
MA - Ngati Haua Horticultural Hub	3	\$1,120,000.00	\$2,089,500.00
AT - Future Orchard Planting Systems	5	\$1,650,000.00	\$2,750,000.00
HP - Orchard digital twin system for orchard optimisation	1	\$44,680.17	\$232,880.93
RF - Building soil health on vineyards	1	\$151,480.00	\$228,030.50
MA - Ngati Pahuwera and Paroa Whenua Collective	2	\$220,000.00	\$264,000.00
MA - Aotea Kiwifruit Collective	2	\$450,450.00	\$540,540.00
HP - Transforming the New Zealand Onion Industry from Humble to Hero	6	\$2,830,000.00	\$6,024,380.00
RF - Regenerative management systems for New Zealand vegetable production	3	\$404,965.00	\$1,004,965.00
MA - Product Development, Added Value Products, Truffle Inoculation	3	\$155,200.00	\$378,400.00
MA - Puha Pesto and the Resto	2	\$415,000.00	\$511,000.00
Upcycling NZ process grade avocados for global export.	2	\$526,800.00	\$1,317,000.00
Control of anthracnose disease in feijoa		\$356,368.50	\$459,682.54
Proof of concept for a Novel biostimulant / biofertiliser formulation	3	\$792,000.00	\$1,980,000.00
Advisory Support for Agricultural and Horticultural Science in Schools	5	\$1,600,000.00	\$2,000,000.00
Smart and Sustainable	7	\$7,448,000.00	\$14,770,000.00
Katikati Innovative Horticulture Project	3	\$144,000.00	\$338,660.00
The New Zealand Vine to Wine Book	1	\$75,000.00	\$130,000.00
80% Less	2	\$80,000.00	\$200,000.00
Open Farms 2022 - 2024	3	\$90,000.00	\$300,000.00
		\$66,251,101.17	\$146,699,523.14

Note 1: excludes arable.

Note 2: the Sustainable Vegetable Systems programme is not included in the table as it is not a part of SFF Futures, but MPI supports it with approximately \$4.7 million in funding.