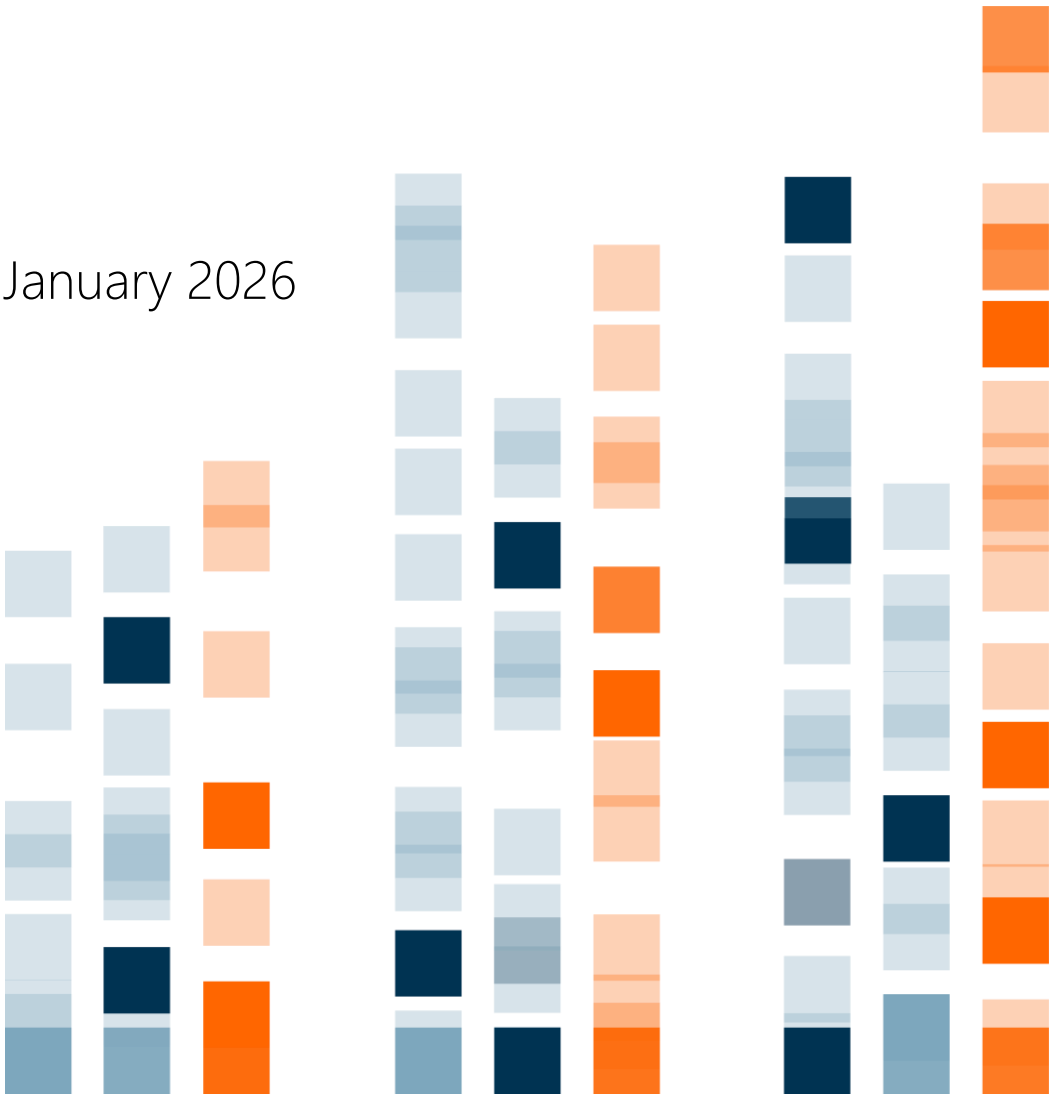
New Zealand's regional horticulture supply chain

for Aotearoa Horticulture Action Plan

January 2026



Infometrics
Economics put simply

Authorship

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Introduction

Aotearoa Horticulture Action Plan commissioned Infometrics and EC Consult to estimate the volume of produce being transported within New Zealand at each stage of the supply chain. In this report, we combine data from Stats NZ's agricultural production census with survey data gathered from 14 horticulture product groups, to estimate the value and volume of produce grown in each region, where it is packed and where it is distributed from. With this information, we identify key transport links supporting significant movements of produce within New Zealand. Finally, we discuss how transport reliability interacts with perishability to affect the value of produce.

Data collection

Stats NZ Agricultural Production Census

Stats NZ collects data through the Agricultural Production Census (APC) every five years, gathering and publishing information on the area grown of each type of crop in each territorial authority. Our analysis used the APC for 2022, the latest available. The APC is complemented by an annual survey with less regional resolution. The information provided by the APC is a valuable benchmark to understand how production is spread throughout the country, but doesn't include insights on how that product is used (fresh, frozen or processed) or for where it is destined (domestic or export market).

In 2022, only 67% of farmers and growers responded to the APC, a drop from 84% in 2017. This low response rate means that the APC may underestimate production areas and volumes.

Survey of product groups

We developed a survey for product groups (PG) to collect information on horticulture production (to cross check with the APC) and provide deeper insights on where and how produce moves from farm to end market. New Zealand's horticulture industry is represented by product groups, which represent the interests of growers of specific types of produce, for example, Onions New Zealand. These groups often obtain data on their sectors through the collection of mandatory levies.

We identified 19 product groups and approached them with a template survey. Fourteen groups provided fulsome responses, in some cases supplemented by other industry players.

Focused on regions

Our analysis focuses on regional council areas, as this reduces the data collection burden on PG while still reflecting reliance on particular supply chain linkages. APC data is available for territorial authorities (districts and cities), but at this scale, supply chains are more likely to be dependent on a wide number of small linkages, making it harder to generalise about supply chains.

Combining data sources

Data from the APC and PG were combined to create a combined picture of horticultural production in each regional council area. In this process, we generally placed greater emphasis on the PG data, except in cases where the APC data was more complete. For example, if the PG stated that there was no production in a specific region, but the APC identified an area of production, we incorporated the APC data. These inconsistencies were common, especially where PG were focused on export-destined produce, as they did not have oversight over production in regions focused on domestic markets. In many cases, the APC data indicated a greater area of production than the PG, which shows that the APC provides a more complete understanding of the horticulture sector than the low APC response rate implies.

Data represents 66% of horticulture production

We estimate that the data collected from PG represents 66% of New Zealand's horticultural produce grown by weight. This estimate is based on the area of production from the APC, information provided by PG, and estimated yields[1] for produce not covered in PG responses. This estimate is approximate as it combines data from different years, applies assumed yields to the area of production from the APC, and there are overlaps between PG which are difficult to disentangle. As an example of PG overlaps, Stats NZ reports the area of carrots grown, but carrots grown for fresh consumption are represented by Vegetables NZ, whereas carrots that are processed are covered by Process Vegetables NZ.

A key distinction is that we have focused on horticultural products grown in New Zealand, and have not considered the movement of imported produce – such as bananas – within New Zealand. Nonetheless, imported produce is often considered a part of New Zealand's fresh produce supply chain.

Estimating value of produce

We estimate the value of produce using data from Fresh Facts for 2021 to 2025. These values are generally based on export values, as these are most commonly published. Our estimates of value may be an over-estimate as we have applied export values to product destined for domestic consumption, which is often of a different grade or lower value. We apply export values to production throughout the supply chain, to reflect the ultimate product value that is dependent on the whole supply chain. These values are inevitably higher than orchard gate returns or other measures of the value of produce as it moves through the supply chain.

[1] Where yields were not provided by the PG, we have attempted to derive yields based on the area grown (from the APC) and the volume produced. Where we were unable to derive yields, we have used published yields from sources such as Fresh Facts.

Reflection on PG data collection

The process of collecting data from Product Groups (PG) highlighted several structural challenges within the horticulture sector that limited the completeness and consistency of the information provided. Although most PG were supportive of the project, many found it difficult to supply the level of detail required.

Data not routinely collected or stored

A key challenge was data availability. Much of the information requested—particularly around packhouse use, distribution pathways, domestic versus export splits, and perishability at different supply chain stages—is not routinely collected or centrally stored by product groups. In many cases, the information is held by other parts of the supply chain such as growers or packhouses.

Commercial sensitivity

The sector also demonstrated high levels of commercial sensitivity, particularly regarding packhouse volumes, infrastructure dependencies, and distribution channels. These sensitivities restricted the level of transparency PG felt comfortable providing, even with assurances of confidentiality. As a result, some responses lacked detail or omitted specific supply chain pathways altogether.

Supply chain complexity

Supply chain complexity was another limiting factor. Many horticultural products move through multiple pathways depending on region, grower, market channel, or destination. For several product groups, it was difficult to generalise these movements into a single national picture without relying heavily on assumptions. Multi-regional crops, in particular, displayed wide variability in how they were harvested, packed, cooled, transported, and distributed.

No organisation has complete view of sector

Collectively, these challenges demonstrate that no single organisation currently holds a complete or authoritative view of horticultural supply chains, and that the information needed to populate a national supply chain model is dispersed, inconsistent, or not collected at all. Despite these barriers, the data received still provided valuable insights into the structure of supply chains, critical infrastructure nodes, and the perishability risks associated with different crops.

The experience of this first data-collection round suggests that future efforts would benefit from a regionalised engagement approach, where trusted regional contacts support data collection, reduce sensitivity concerns, and help contextualise local supply chain practices. Establishing ongoing, trusted data channels and moving toward an annual update cycle would also strengthen the completeness and reliability of future datasets.

Regional production

Large sample, but not complete

Our regional production estimates are based on a large sample of responses – with more than half of PG providing information and a 67% response rate to the APC. From this large sample, we make inferences about the supply chain for produce as it moves through New Zealand, but this is not a complete picture.

Data covers 24 horticultural products

The data collected and combined from 14 PG covers 24 horticultural products, of varying scales. Table 1 shows all 24 products which are collectively worth $7.97b[2], with 69,600 hectares planted and producing 2.4m tonnes per year. Kiwifruit is the most valuable product, with 828,000 tonnes grown over 14,700 hectares, worth $4.9b per year.

[2] The value of produce is based on a combination of sources, which in some cases involves export values being applied to total production volumes, which could lead to an over-estimate of the value for some products and in total.

Table 1

Horticultural products included in analysis

Infometrics estimates based on Stats NZ APC, PGM responses and Fresh Facts

Product	Planted area (hectares)	Volume harvested (tonnes)	Value ($m)
Kiwifruit	14,686	828,000	$4,851.4
Apples and pears	10,165	609,900	$1,655.3
Vegetables	12,543	212,904	$313.3
Onions	4,840	250,000	$218.6
Potatoes	8,424	350,167	$158.4
Cherries	1,191	8,200	$154.4
Avocados	5,003	41,844	$141.7
Tomatoes	78	30,000	$134.0
Strawberries	5,283	9,183	$99.4
Squash	4,195	56,494	$52.1
Mandarins	629	11,054	$34.8
Nectarines	296	6,072	$28.5
Lemons	363	5,609	$19.0
Plums	278	2,324	$16.9
Peaches	241	3,767	$16.3
Oranges	624	7,222	$16.3
Persimmons	119	2,500	$15.8
Apricots	271	2,931	$15.7
Kiwiberry	30	490	$14.0
Feijoas	190	971	$7.3
Tamarillos	72	430	$3.8
Lime	0	435	$2.0
Grapefruit	31	325	$0.8
Tangelos	27	380	$0.7
Total	**69,578**	**2,441,202**	**$7,970**

Note: Production volumes and values for lime were provided, but the growing area wasn't available in the APC

Bay of Plenty, Hawke's Bay are largest growers

The largest regions for horticultural production are Bay of Plenty and Hawke's Bay. Table 2 shows that 14,200 and 17,200 hectares are planted for horticulture in Bay of Plenty and Hawke's Bay respectively. The value of this produce diverges, reflecting the prevalence of high-value kiwifruit and avocados in Bay of Plenty. Bay of Plenty produce is worth $4.1b per year, and Hawke's Bay produce is worth $1.3b. The lower value of Hawke's Bay produce could also reflect lower participation from PG representing Hawke's Bay produce types.

Table 2

Horticultural production by region included in analysis

Infometrics estimates based on Stats NZ APC, PGM responses and Fresh Facts

Product	Planted area (hectares)	Volume harvested (tonnes)	Value ($m)
Northland Region	3,324	55,298	$246
Auckland Region	8,095	180,607	$391
Waikato Region	4,140	165,003	$361
Bay of Plenty Region	14,152	709,948	$4,094
Gisborne Region	6,174	121,681	$368
Hawke's Bay Region	17,202	597,493	$1,347
Taranaki Region	49	607	$3.2
Manawatū-Whanganui Region	1,354	54,435	$83
Wellington Region	200	6,683	$18
Nelson-Tasman	2,988	170,075	$524
Marlborough Region	137	3,476	$13
West Coast Region	10	208	$0.8
Canterbury Region	9,441	321,018	$271
Otago Region	2,074	43,479	$240
Southland Region	237	11,191	$10
Total	**69,578**	**2,441,202**	**$7,970**

Northland, Auckland, Waikato, Gisborne, Nelson-Tasman, Canterbury and Otago are also major regions for horticulture production, each growing over $200m of produce per year.

Supply chains

Produce movements vary

The movement of produce varies widely depending on the product, where it is grown and what its end use is. Some products are packed and retailed onsite, whereas others are transported off site for packing, with further movements for storage, distribution and/or export. As we have focused our analysis at a regional council level, our analysis of supply chain dependencies focuses predominantly on inter-regional flows of produce, as these depend on supply chain linkages between regions.

We look at produce movements over two generalised stages – from farm to packhouse, and from packhouse to distribution. In this generalisation, distribution could include a distribution centre or export port. We have excluded movements from distribution to retail, such as from a supermarket distribution centre to a supermarket. These movements are numerous, diverse, and relatively small compared to the major aggregated flows earlier in the supply chain. Movements to retail are likely to have more alternatives and therefore less dependency on individual transport linkages.

Supply chain data is limited

Supply chain data is limited, as not all PG were able to identify and quantify the supply chains for their produce. This required significant inference – for example, for produce packed in Northland with no distribution centre specified, we assumed it was transported to Auckland for distribution, as Auckland features a number of major distribution centres as well as a major airport and seaport for export. Where supply chains were not specified, we have assumed that produce is transported to the nearest major distribution centre in Christchurch or Auckland (for domestic consumption) or the nearest seaport (for exports).

Most produce moved by road

PG advised that most produce is transported by road, not only from farm to packhouse, but also from packhouse to distribution centre or export port.

One PG identified that coastal shipping was used seasonally to transport produce from Northport (Northland) and Port Nelson (Nelson-Tasman) to Port of Tauranga (Bay of Plenty). Other PG noted use of coastal shipping and the inter-island ferries, without further specificity.

Limited use of rail was identified by PGs, primarily between inland ports and seaports (such as Auckland's Metroport to Port of Tauranga). This finding is consistent with Fresh Facts' analysis of Ministry of Transport data, which shows that relatively small volumes of produce are transported by rail.

Most produce packed in the region grown

Information from PG indicated that the majority of produce – 98% by weight – is packed in the region that it is grown (see Table 3). Of the remainder, in the North Island, most is

transported to the Bay of Plenty for packing, which reflects the region's role as a hub for produce such as Kiwifruit and Avocado.

Table 3

Horticultural produce by region grown and packed

Infometrics estimate, tonnes

Region grown	Packed in same region	Packed in different region	Packing region (if different), % of total packed different
Northland Region	55,298		
Auckland Region	180,607		
Waikato Region	133,041	31,963	Bay of Plenty (100%)
Bay of Plenty Region	709,948		
Gisborne Region	121,549	131	Bay of Plenty (100%)
Hawke's Bay Region	588,704	8,789	Gisborne (72%), Bay of Plenty (28%)
Taranaki Region	607		
Manawatū-Whanganui Region	45,930	8,505	Bay of Plenty (100%)
Wellington Region	6,683		
Nelson-Tasman	170,075		
Marlborough Region	3,476		
West Coast Region	208		
Canterbury Region	321,018		
Otago Region	43,479		
Southland Region	3,745	7,446	Otago Region (100%)
Total	**2,384,368**	**56,834**	

Wide movement from packing to distribution

Looking at the movement of produce from packing to distribution shows a wide movement between regions (see Table 4). The distribution point could be an export port (sea or air) or a distribution centre. Across the country, 80% by weight moves from packing to a distribution point in the same region, with 20% moving across regions. For many exports, the distribution point is the nearest port to the packing location. For domestically consumed produce, the distribution point is typically Auckland.

Table 4

Horticultural produce by region packed and distributed

Infometrics estimate

Region packed	Distributed in same region *Tonnes*	Distributed in different region *Tonnes*	Distribution region (if different), % of total distributed different
Northland Region	2,402	52,896	Auckland (89%), Bay of Plenty (5%), Canterbury (5%)
Auckland Region	180,607		
Waikato Region	53,655	79,385	Bay of Plenty (73%), Auckland (27%)
Bay of Plenty Region	741,641	11,370	Auckland
Gisborne Region	23,165	104,710	Hawke's Bay (52%), Auckland (31%), Bay of Plenty (10%), Manawatu-Whanganui (3%), Canterbury (4%)
Hawke's Bay Region	453,659	135,045	Auckland (95%), Bay of Plenty (2%), Manawatu-Whanganui (3%)
Taranaki Region	421	187	Auckland (100%)
Manawatū-Whanganui Region	38,292	7,637	Hawke's Bay (100%)
Wellington Region	125	6,558	Manawatu-Whanganui (100%)
Nelson-Tasman	101,500	68,575	Manawatu-Whanganui (63%), Canterbury (37%)
Marlborough Region	254	3,222	Canterbury (100%)
West Coast Region	88	120	Canterbury (100%)
Canterbury Region	321,018		
Otago Region	23,785	27,140	Canterbury (100%)
Southland Region	3,642	104	Canterbury (100%)
Total	**1,944,254**	**496,948**	

Produce moved from the growing region to another region for distribution is typically moved to a region which is a key hub for that produce (e.g. Bay of Plenty for Kiwifruit) or a major centre with ports and supermarket distribution centres (e.g. Auckland, Manawatu-Whanganui, Wellington, Canterbury). Auckland accounts for the distribution of 85% of produce that is distributed in a different region from where it is packed.

23% of produce moved between regions for packing or distribution

Adding together inter-regional growing-packhouse and packhouse-distribution movements, an estimated 23% by weight of produce grown in New Zealand moves between regions for packing or distribution. Based on our sample of produce types, this inter-regional movement totals 553,800 tonnes.

Top nine inter-regional movements worth $50m+

The top nine inter-regional produce movements each support over $50m worth of produce each year (see Table 5). These top nine movements together account for 89% of inter-regional produce movements, which given the dominance of road transport, shows the importance of a handful of roads for the movement of New Zealand's produce.

For example, the $215m flow between Hawke's Bay and Auckland would generally utilise State Highway 5 Napier to Taupō road. Flows from Gisborne to Bay of Plenty and Auckland, collectively worth $112m, would generally utilise State Highway 2 Gisborne to Ōpōtiki. In both cases, significant detours would be required for this valuable and potentially perishable produce if these routes were unavailable.

Table 5

Horticultural produce movements between regions

Includes farm-packing and packing-distribution, in both directions

Region 1	Region 2	Volume (tonnes)	Value ($m)
Waikato Region	Bay of Plenty Region	90,007	$238
Northland Region	Auckland Region	46,642	$224
Hawke's Bay Region	Auckland Region	127,851	$215
Otago Region	Canterbury Region	27,140	$179
Nelson-Tasman	Canterbury Region	25,276	$128
Waikato Region	Auckland Region	16,336	$82
Gisborne Region	Auckland Region	32,592	$59
Gisborne Region	Bay of Plenty Region	10,538	$54
Manawatū-Whanganui Region	Bay of Plenty Region	8,505	$50
Hawke's Bay Region	Gisborne Region	6,325	$37
Bay of Plenty Region	Auckland Region	4,081	$26
Gisborne Region	Hawke's Bay Region	13,801	$23
Gisborne Region	Canterbury Region	4,359	$13
Hawke's Bay Region	Bay of Plenty Region	5,121	$11
Northland Region	Bay of Plenty Region	2,735	$9.3
Northland Region	Canterbury Region	2,787	$8.5
Manawatū-Whanganui Region	Hawke's Bay Region	7,637	$6.7
Marlborough Region	Canterbury Region	2,258	$5.9
Southland Region	Otago Region	7,446	$3.4
Gisborne Region	Wellington Region	238	$1.5
Southland Region	Canterbury Region	104	$1.1
Northland Region	Gisborne Region	71	$0.2
Taranaki Region	Auckland Region	5	$0.0
West Coast Region	Canterbury Region	3	$0.0
Total		**441,858**	**$1,376**

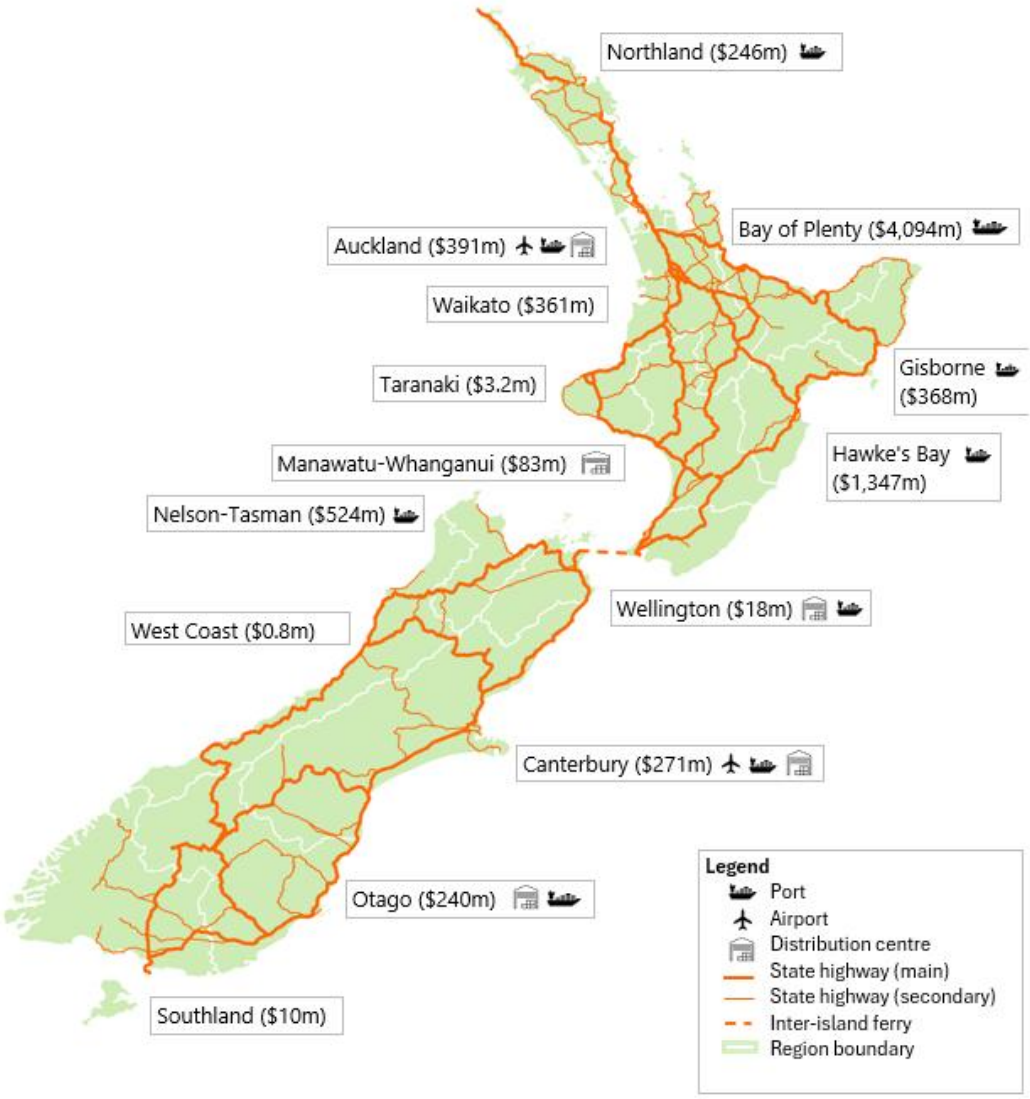
With New Zealand's horticulture production, packing and distribution concentrated in the 'golden triangle' of Auckland, Waikato and Bay of Plenty, roads in the Waikato Region are at the core of horticulture produce movements. An estimated 50% of New Zealand's inter-regional produce movements transit over Waikato Region roads.

PG identified two specific road transport vulnerabilities:

- The Brynderwyns (State Highway 1 between Auckland and Northland), which supports up to $242m of produce movement out of Northland Region.
- Waiokea Gorge (State Highway 2 between Gisborne and Bay of Plenty), which supports up to $112m of produce movement out of Gisborne Region.

Relatively limited inter-island freight was identified through our analysis – just $22m or 7,146 tonnes. Nonetheless, several PG identified the importance of inter-island ferries for their supply chains, not only for end-products, but also key inputs.

Figure 1. Map of horticultural production by region, with key nodes for horticulture distribution and export.



Note: Ports and airports are not shown if PG did not indicate they were used in the export of produce.

Perishability

Perishability determines sensitivity to delays

Perishability is a critical determinant of how sensitive horticultural products are to the reliability of transport linkages. For almost all crops, the most time-critical stage occurs immediately after harvest, during the first transport "hop" from the field to the packhouse. In this window—often measured in hours rather than days—produce must reach appropriate facilities to be cooled, cured, frozen, or otherwise stabilised. Delays at this stage can rapidly accelerate quality loss, shorten shelf life, and reduce market options, even if the product does not immediately spoil.

Perishability a risk across transport stages

Once produce has been stabilised under controlled conditions (for example through chilling, controlled atmosphere storage, curing, or freezing), it generally becomes more robust and can tolerate longer transport times. However, this increased resilience is conditional: products remain highly sensitive to any interruption in temperature control, handling standards, or timing. As a result, perishability does not disappear after the first hop, but instead shifts from an immediate spoilage risk to a quality, shelf-life, and value risk across subsequent transport stages.

The relationship between perishability and transport reliability is therefore cumulative. Disruptions early in the supply chain can reduce the available shelf life in later stages, narrowing delivery windows and increasing exposure to downstream delays. In addition, even where produce arrives in acceptable condition, delays in domestic or export transport can significantly reduce its value if key market windows, shipping slots, or contractual obligations are missed. Product group feedback highlighted that relatively small delays in domestic transport can cascade into much larger losses if they result in missed export connections or reduced access to premium markets.

Perishability varies widely by crop

Perishability also varies across crops and supply chains, with differences in acceptable timeframes before stabilisation, total storage life once stabilised, and tolerance to transport disruptions. Some crops remain highly perishable even under controlled conditions, while others can be stored for weeks or months provided conditions remain stable. These differences influence transport mode choices (road, ferry, coastal shipping, or air), routing decisions for domestic versus export markets, and exposure to infrastructure vulnerabilities along key corridors.

Reliable transport maximises value of produce

Overall, reliable and resilient transport linkages are essential not only to prevent product loss, but to maximise value across horticultural supply chains. Maintaining timely access to packhouses, safeguarding critical transport routes, and reducing the risk of cascading delays are central to protecting shelf life, meeting market requirements, and ensuring the best possible returns for growers.

PG identified a range of vulnerabilities

Responses from PG identified that produce supply chains are vulnerable to a range of threats including:

- Road closures from extreme weather events
- Inter-island ferry disruption
- Ships skipping ports ('blank sailings')
- Port congestion adding cost and delays
- Limited availability of empty shipping containers for exports
- Limited international airfreight capacity

PG noted that growers may have alternatives when these supply chain threats manifest, such as transport by alternative routes, use of alternative nodes, or delaying harvest. However, these alternative options can increase the risk of produce perishing and reduce returns for growers.