

# SUBMISSION ON

# Proposed National Policy Statement for Natural Hazard Decision-making

15 November 2023

**To:** Ministry for the Environment

**Name of Submitter:** Horticulture New Zealand

**Supported by:** NZ Apples & Pears Inc., NZ Asparagus Council,  
NZ Kiwifruit Growers Inc., Process Vegetables NZ, Potatoes NZ,  
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## Our submission

Horticulture New Zealand (HortNZ) thanks the Ministry for the Environment for the opportunity to submit on the Proposed National Policy Statement for Natural Hazard Decision-making. HortNZ welcomes any opportunity to continue to work with the Ministry and to discuss our submission.

The details of HortNZ's submission and decisions we are seeking are set out below.

# HortNZ's Role

## Background to HortNZ

HortNZ represents the interests of approximately 4,200 commercial fruit and vegetable growers in New Zealand who grow around 100 different fruit, and vegetables. The horticultural sector provides over 40,000 jobs.

There are approximately 80,000 hectares of land in New Zealand producing fruit and vegetables for domestic consumers and supplying our global trading partners with high quality food.

It is not just the direct economic benefits associated with horticultural production that are important. Horticulture production provides a platform for long term prosperity for communities, supports the growth of knowledge-intensive agri-tech and suppliers along the supply chain; and plays a key role in helping to achieve New Zealand's climate change objectives.

The horticulture sector plays an important role in food security for New Zealanders. Over 80% of vegetables grown are for the domestic market and many varieties of fruits are grown to serve the domestic market.

HortNZ's purpose is to create an enduring environment where growers prosper. This is done through enabling, promoting and advocating for growers in New Zealand.



## HortNZ's Resource Management Act 1991 Involvement

On behalf of its grower members HortNZ takes a detailed involvement in resource management planning processes around New Zealand. HortNZ works to raise growers' awareness of the Resource Management Act 1991 (RMA) to ensure effective grower involvement under the Act.



# Executive Summary

## Differentiating between urban and rural risk

HortNZ supports a national framework for natural hazard decision-making to improve consistency across regions. Our concern is that the framework for determining risk accurately recognises the differences between urban and rural activities. We want to ensure that non-habitable horticultural structures and ancillary buildings are not accidentally caught up in the rules designed to protect urban areas, since their risk profiles are vastly different.

There is a genuine risk to New Zealand's food production and food security if horticultural businesses are accidentally caught in urban risk assessments and forced to retreat from highly productive land. Unworkable planning rules are already constraining fruit and vegetable production in multiple regions.

## Amendments to enable supply of fruits and vegetables

Under the Natural and Built Environment Act (NBEA), the national planning framework must give regard to enabling the supply of fresh fruits and vegetables.<sup>1</sup> The proposed National Policy Statement for Natural Hazard Decision-making (pNPS-NHD) can do that with the following amendments:

- Exclude non-habitable structures for primary production from the definition of “new development”.
- Introduce a new definition of “primary production” aligned with the National Planning Standards to support related amendments.
- Amend Policy 5 to allow new development in high-risk areas if it supports primary sector business, and the risk is deemed tolerable by the business without expected compensation from government.
- Implement a new policy requiring that mitigation measures are evaluated on their ability to reduce:
  1. Risk to human life,
  2. Risk to human life-supporting activities such as food production and human drinking water supplies,
  3. Risk to property and other commercial activities.

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<sup>1</sup> Natural and Built Environment Act 2023. Clause 129 (g). Accessed online <https://www.legislation.govt.nz/act/public/2023/0046/latest/LMS847877.html>.

Table 1: Risks to horticulture from the pNPS-NHD policy

Risks associated with this policy to horticulture	Mitigations for risks from this policy to horticulture
Horticulture will be forced to retreat from highly productive land, reducing fresh fruit and vegetable supply and not optimising our use of soil resources.	Exclude non-habitable structures for primary production from the definition of “new development”.
Risk assessment methodology designed for urban areas or pastoral farming will be used for horticulture, resulting in an inappropriate risk determination.	Risk assessment methodology should consider the different design-life of horticultural structures and the varied human risk involved in different activities on flood-prone land.
Activities necessary to enable horticulture will be relocated, leaving remaining horticultural businesses without key infrastructure to operate.	Amend Policy 5 to allow new development in high-risk areas if it supports primary sector business, and the risk is deemed tolerable by the business without expected compensation from government.

# Submission

## 1. Food security and enabling the supply of fresh fruit and vegetables

Natural hazard decision-making must consider the risk natural hazards, particularly related to climate change, pose to New Zealand's food security. Extreme weather may cause global shocks to supply chains that leave imported food unavailable or unaffordable. Our country can prepare with a resilient local food system robust enough to sustain our people. That starts with ensuring policies and rules enable the supply of fresh fruits and vegetables, which contribute to healthy diets. The Natural and Built Environment Act 2023 (NBEA) takes up this call to action with clause 129, which requires the National Planning Framework to provide direction on enabling the supply of fresh fruits and vegetables.<sup>2</sup>

In New Zealand, over 80% of vegetables are grown for domestic consumption, and many fruits as well, particularly summerfruit and citrus. The vast majority of the ten key vegetable staples of New Zealand diets are grown or processed in New Zealand.<sup>3</sup> Our country cannot import all the fresh produce we need to feed our population due to our geographic isolation and the short shelf life of fresh fruit and vegetables.

When major growing regions are battered by severe weather and forced to halt production, like Gisborne and Hawke's Bay during Cyclone Gabrielle, the country's food supply suffers. In the aftermath of that disaster, we saw the price of fresh produce skyrocket, which increased the cost of living across the country. Destruction from the cyclone is still impacting the availability and price of tinned fruits and vegetables nine months on from the event.<sup>4</sup>

Food insecurity is already pervasive in New Zealand, linked with poor physiological health outcomes and psychological distress.<sup>5</sup> A 2019 Ministry of Health study estimated that 19% of all children in New Zealand (174,000) live in food-insecure households.<sup>6</sup> There are complex social and economic reasons why people struggle to meet their nutritional needs. Addressing the issue of food insecurity will be even more difficult, however, if supply is reduced because growers are forced out of the business through unworkable planning rules.

The following sections of this submission will cover what national direction is needed to ensure that natural hazard decision-making supports, and does not impair, our local food system to provide for the health and resilience of our communities.

<sup>2</sup> Natural and Built Environment Act 2023. Clause 129 (g). Accessed online <https://www.legislation.govt.nz/act/public/2023/0046/latest/LMS847877.html>.

<sup>3</sup> KPMG, 2017 New Zealand's domestic vegetable production: the growing story.

<sup>4</sup> Taunton, Esther. "Where have all the tinned fruit and vegetables gone?" 05 November 2023. *Stuff*. Accessed online <https://www.stuff.co.nz/business/133221876/where-have-all-the-tinned-fruit-and-vegetables-gone>.

<sup>5</sup> *The association of food security with psychological distress in New Zealand and any gender differences*, Social Science & Medicine 2011

<sup>6</sup> Ministry of Health. (2019). *Household food insecurity among children, New Zealand Health Survey*

## 2. Policy support for climate adaptive growing systems

Structures that support climate adaptive growing systems like greenhouses, frost fans, artificial crop protection structures and crop support structures are not inhabitable and pose little risk to human safety in the face of natural hazards. Other ancillary buildings that are part of horticultural production like packhouses similarly pose little risk. Their use can be supported by excluding them from rules for buildings and structures under the pNPS-NHD.

A single adverse weather event can decimate a season's crop, but there are some adaptive growing systems that mitigate the chances of disaster. Vegetables grown indoors or undercover in Northland, Auckland and Bay of Plenty were more likely to survive the latest cyclone events.<sup>7</sup> Covered cropping – the practice of growing indoors – keeps plants warm through the winter and protected from heavy rain, wind and frost, enabling a year-round supply of fruits and vegetables like tomatoes, courgettes and lettuce. Covered cropping includes greenhouse growing and hydroponic systems. The covered cropping sector is under a big push to decarbonise, cementing its place in the future of climate resilient food supply.

Covered cropping faces regulatory barriers to its success. However, planning rules sometimes restrict greenhouses from establishing in horticultural areas due to the National Policy Statement for Highly Productive Land (NPS-HPL).<sup>8</sup> Greenhouses can also be restricted by district plan rules for building site coverage and requirements for stormwater consents. Market uncertainty due to frequent tinkering with the Emissions Trading Scheme has also made it more difficult for these businesses to find a certain decarbonisation pathway. Policies should enable greenhouses as the climate adaptation asset that they are to protect our food supply in times of adverse weather.

### **Case Study: Enabling Climate Adaptive Food Production in the Netherlands**

The Netherlands are a world leader in climate adaptation and horticulture. The Dutch contend with life below sea level and export the second-most food of any country on the globe. One of the five pillars of the Netherlands Approach for Climate Adaptation in Agriculture is Crops and Cultivation Systems. They advocate improving regulations to enable structures like hail covers and indoor cropping which protect plants from frost, rain and other extreme weather.<sup>9</sup>

Other protection for our food supply from the weather include frost fans, which move air to reduce the risk of temperatures dropping before crops are damaged by frost, and hail covers, which protect from hail, wind and birds.

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<sup>7</sup> TomatoesNZ, Process Vegetables New Zealand

<sup>8</sup> Ministry for the Environment. "Managing the use and development of highly productive land: Potential amendments to the NPS-HPL: Discussion document". September 2023. Accessed online [Potential-amendments-to-the-NPS-HPL-discussion-document.pdf \(environment.govt.nz\)](https://www.environment.govt.nz/potential-amendments-to-the-nps-hpl-discussion-document.pdf).

<sup>9</sup> Ministry of Agriculture, Nature and Food Quality of the Netherlands. "International Exchange on Climate Adaptation in Agriculture". December 2022. Accessed online <https://www.government.nl/topics/agriculture/documents/leaflets/2023/02/10/international-exchange-on-climate-adaptation-in-agriculture> (p. 7)

Many horticultural growing operations already have measures in place to reduce the impact of natural hazards, such as silt traps to prevent sediment erosion and soak pits for flooding attenuation. Growers are in tune with their environment and already incorporating flooding and damage considerations into their business plans.

### **3. Mitigate flood risk and maintain roads in food-producing areas**

Although horticulture should not retreat from highly productive land, we still need to protect our food resources from floods to build resilience into our food system and ensure our population has access to affordable, healthy and culturally appropriate food. Drainage works, channel clearance and ongoing maintenance of flood protection infrastructure is needed in the rural environment to avoid or mitigate the effects of flooding and support rural production. The government needs to continuously strengthen grey infrastructure like stop banks and remove silt and shingle from flood channels to prevent dangerous debris flows.

Regional councils should be directed to work with the rural community to coordinate and align private and public drainage systems to ensure that flood waters do not leave public networks just to subsume production land. Flood protection should protect areas where high capital protection is in place to protect investments like orcharding trees, which take several years to pay for themselves. Flood protection infrastructure should not be designed such that it worsens flooding on horticultural land because that would exacerbate adverse impacts on domestic food supply.

Stronger adaptation means less recovery cost and effort is needed post-disaster, allowing food production to bounce back. This keeps the cost of living down post-disaster because fruit or vegetable shortages raise prices. It also keeps the industry viable into the future.

We still need to maintain road connectivity when an area is determined too risky for housing but still suitable for food production. Roads are critical to ensure timely distribution of perishable produce from the source to consumers. This is especially important in times of natural disaster to ensure food security, so that growing areas are not cut off when we most need a consistent supply of food. Rural communities need multiple paths to evacuate in times of disaster in case one is cut off by a natural hazard like a slip.

Protecting our supply of fresh fruit and vegetables requires appropriate risk accounting for horticulture, which is discussed in the following section of this submission.

### **4. Risk accounting**

Risk accounting determines how we prioritise natural hazard protections. The fundamental risks associated with horticulture are far less than the risks to life and property from sensitive activities like housing, schools and hospitals. Primary production, as defined in the National Planning Standards,<sup>10</sup> should be treated differently in risk accounting because it involves far

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<sup>10</sup> Primary production means: "(a) any aquaculture, agricultural, pastoral, horticultural, mining, quarrying or forestry activities; and (b) includes initial processing, as an ancillary activity, of commodities that result from



fewer people in a much larger geographic space than urban land uses. The risk is also lower because not all employees sleep at their places of business – many employees are only there when they are awake and more aware of any potential natural hazard risk.

#### 4.1. Consistent risk accounting across the country

National consistency in risk accounting methods is needed so that regional and territorial authorities have clear direction and mandate to act. Risk assessment needs to consider both historic flood data and future climate projections to stop zoning housing and other sensitive land uses in flood zones or areas where the sea level will rise. Communities need certainty and transparency about the level of protection provided by their councils' hazard management infrastructure.

#### 4.2. Calculating risk for horticulture versus housing

Risk accounting must consider the differences between urban and rural land-uses. The more people spend a lot of time on a plot of flood-prone land, the riskier it is for that activity to continue. Dense housing anticipates many people spending at least half of every day and sleeping in that neighbourhood, which a large horticultural operation has a limited number of workers on the property during fewer hours of the day, fewer days per year, and most employees do not sleep at the business property.

The second difference is the design life of housing versus horticultural structures. Housing may be built to last a century. Once housing is built on a piece of land, it is very rare for the land use to change. Structures that support fruit and vegetable crops like crop support structures (e.g., trellises, frames for bird nets and hail covers, artificial wind shelters<sup>11</sup>) have a design-life closer to 15 years. Orchards also have short periods when they can profit off of certain varieties of fruit, so they often replace their trees every decade or so to follow market demand for new varieties.



Figure 1: 2D orchard crop support structure. Image source: Plant and Food Research.<sup>12</sup>

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the listed activities in a); (c) includes any land and buildings used for the production of the commodities from a) and used for the initial processing of the commodities in b); but (d) excludes further processing of those commodities into a different product.” - [National Planning Standards](#)

<sup>11</sup> HortNZ. “Images of Crop Support Structures”. Selwyn District Council. Accessed online [DPR-0353 Horticulture NZ - Photos.pdf \(selwyn.govt.nz\)](#)

<sup>12</sup> [Robots and super orchards · Plant & Food Research \(plantandfood.com\)](#)

A basic flood return period calculator shows the vast difference in likelihood of a flooding event affecting a structure based on the design life (Table 2). For instance, a crop support structure with a 15-year design life has a 14% chance of seeing a 100-year flood in its period of use. In contrast, a house with a 100-year design life has a 63.4% chance of seeing a 100-year flood in its lifespan.<sup>13</sup> That difference in likelihood shows why it may be tolerable to establish orchards but not a residential neighbourhood on a floodplain.

*Table 2: Design life versus flood likelihood*

<b>Design life</b>	<b>% chance of 100-year flood within design life</b>
Crop support structure: 15 years	14%
House: 100 years	63.4%
School: 100 years+	63.4%+
Infrastructure: 100 years	63.4%

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<sup>13</sup> [Flood Return Period Calculator \(weather.gov\)](https://www.weather.gov/floodreturnperiodcalculator)

## Discussion Questions

Our responses to the specific questions in the consultation document can be found below.

**Q. 1**      **NPS-NHD as a first step:** Is more action needed to reduce development from occurring in areas facing natural hazard risk?

The NPS-NHD and legislation that comes out of the Inquiry into community-led retreat and adaptation funding will make strides toward reducing development in areas facing natural hazard risk. More detailed information on risk should be publicised, so that communities can make informed decisions for themselves on where to live.

**Q. 2**      Are there any other parts of the problem definition that you think should be addressed through the NPS-NHD? Why?

No specific comments.

**Q. 3**      Are there other issues that have not been identified that need to be addressed through the NPS-NHD or the comprehensive National Direction for Natural Hazards?

There is an existing imbalance in planning for natural hazards in urban and rural areas. For instance, the *Community-led retreat and adaptation funding: Issues and options* paper had just one question out of 43 with reference to primary production.<sup>14</sup> The NPS-NHD should direct natural hazard planning for urban and rural areas while recognising the different risk profiles between activities in the two categories of zones.

HortNZ strongly recommends that new natural hazard decision-making policies are evaluated from a rural lens, as well as an urban one, to make sure that risk accounting is appropriate for a wide range of activities. Applying urban risk accounting to rural land uses would result in unnecessarily restricting our food production. Should an unbalanced risk accounting system force retreat from highly productive land used for food production, fruit and vegetable supply will fall, which is a risk to our national food security.

Much of our most fertile soils are located on flood plains. Primary production should not be forced to retreat from highly productive land, and natural hazard protection infrastructure should not diminish the productivity of versatile soils. New Zealand's highly productive alluvial terraces are an intergenerational asset that have taken thousands of years to develop. This land is the most suitable for low emissions, high-value primary production. The NPS-HPL recognises this land should be protected for land-based primary production. This should include protection from urban sprawl, protection from sediment deposition through upstream catchment management, and flood protection.

Weighing priorities for risk mitigation on highly productive land is playing out in real time in the aftermath of Cyclone Gabrielle. Large parts of Pākōwhai, a major horticultural area in

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<sup>14</sup> Ministry for the Environment. *Community-led retreat and adaptation funding: Issues and options*. August 2023. Accessed online <https://mfe1.cwp.govt.nz/assets/publications/climate-change/Community-led-retreat-Issues-and-options.pdf>.

Hawke's Bay, have been classified Category 3 - high risk.<sup>15</sup> Residential activities are no longer considered appropriate in this zone due to the flood hazard. This means that residential or mixed-use properties are eligible for voluntary buy-out by the Hastings District Council.

Other activities, including horticulture, can continue, although it is still unclear how associated facilities like staff rooms on orchards are being considered. National guidance could assist with this dilemma. This example shows how primary production activities can continue while residential activities retreat.

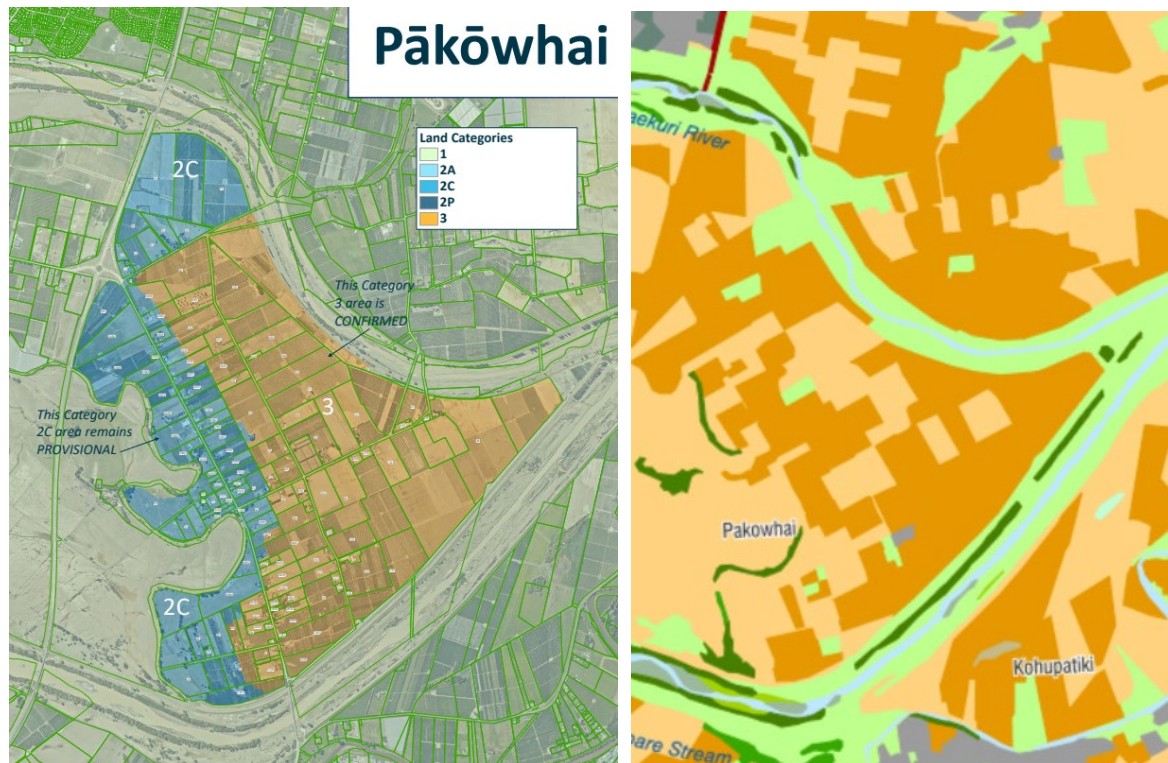


Figure 2 (a), Left: Hastings District Council land categorisation for Pakowhai;<sup>16</sup> Figure 2 (b), Right: Land cover map of the same area. Light yellow: short-rotation cropland, orange: orchards, vineyards or other perennial crops<sup>17</sup>

Horticulture is a lower risk activity because people do not sleep at these businesses, so they are more alert to emergencies than they are at home. Proactively using the land for primary production also ensures that it is looked after and spares Council the cost of maintaining it.

<sup>15</sup> [Land categorisation maps | Hastings District Council \(hastingsdc.govt.nz\)](https://www.hastingsdc.govt.nz/land-categorisation-maps)

<sup>16</sup> [Pakowhai-28-September-2023.pdf \(hastingsdc.govt.nz\)](https://www.hastingsdc.govt.nz/pakowhai-28-september-2023.pdf)

<sup>17</sup> Manaaki Whenua Landcare Research. NZ Landcover Explorer. Accessed online [Explore NZ Landcover Change » Our Environment \(scinfo.org.nz\)](https://www.landcoverexplorer.org.nz/)

**Q. 4** **Purpose:** Do you support the proposed NPS-NHD's requirement that decision-makers take a risk-based approach when making decisions on new development in natural hazard areas? Why or why not?

Yes. We support a risk-calculation as outlined under our response to Policy 2 below.

**Q. 5** **Scope:** Should all natural hazards be in scope of the proposed NPS-NHD? Why or why not?

Yes. Natural hazard planning should be integrated, so that land users are made equally aware of all risks to their activities.

**Q. 6** If not all natural hazards are in scope, which ones should be included? Why?

No specific comments.

**Q. 7** Should all new physical development be in scope of the proposed NPS-NHD? Why or why not?

No. Horticultural structures like frost fans and ancillary activities to horticulture like packhouses should not be in scope of the pNPS-NHD. If this distinction is not made, horticulture will be unable to establish in high-risk areas under the strong avoid clause in Policy 5 (a). The ability for horticulture to remain on risky land was recognised by the Expert Working Group on Managed Retreat in their report for the Inquiry into community-led retreat and climate adaptation.<sup>18</sup>

The regulatory impact statement for the pNPS-NHD states that, "Given the focus of the NPS is on new physical developments such as buildings and structures, the NPS would not apply to new on-land pastoral, agricultural, horticultural, forestry activities, or open space recreational activities (such as new parks and playgrounds). However, buildings and residential dwellings associated with these activities are in scope."<sup>19</sup> If this is the case, it needs to be made explicit that horticultural structures are not accidentally captured to ensure that highly productive land (which is often in flood-prone areas) can still be used for primary production.

Horticultural uses are an appropriate land-use at the end of a community retreat process to protect our supply of fresh fruits and vegetables. Protecting this land to enable the supply of fresh fruit and vegetables may be appropriate. Highly productive land is a limited resource that should be utilised and protected for primary production where possible. Horticulture is a lower risk activity because people do not sleep at these businesses, so they are more alert to emergencies than they are at home. Proactively using the land for primary production also ensures that it is looked after and spares Council the cost of maintaining it.

<sup>18</sup> Expert Working Group on Managed Retreat. 2023. Report of the Expert Working Group on Managed Retreat: A Proposed System for Te Hekenga Rauora/Planned Relocation. Wellington: Expert Working Group on Managed Retreat.

<sup>19</sup> *Supplementary Analysis Report: National Policy Statement - Natural Hazard Decision-Making*. Accessed online <https://www.treasury.govt.nz/sites/default/files/2023-09/ria-mfe-npsnhd-jul23.pdf>. (p. 4)

The level of flood protection required to support the ongoing use of highly productive land for primary production will be less than would be required if the land was being used for residential activities.

Furthermore, the structures and ancillary buildings for horticulture have a shorter design life than other buildings. Housing may be built to last a century. Once housing is built on a piece of land, it is very rare for the land use to change. Structures that support fruit and vegetable crops like crop support structures (e.g., trellises, frames for bird nets and hail covers, artificial wind shelters) are non-habitable and have a design-life closer to 15 years. See images of these structures in Appendix B.

It would be a perverse outcome if climate adaptive growing systems, meant to protect our food supply from adverse weather, were unable to establish on risk-prone land due to this regulation. As such, greenhouses and other indoor growing systems should be excluded from these rules.

This policy should focus on development that has a high risk of damage to other activities, which will not include horticultural activities.

**Q. 8** What impact do you think the proposed NPS-NHD would have on housing and urban development? Why?

The pNPS-NHD will gradually push housing and urban development out of riskier areas. Relocated housing should not be established on highly productive land, which is a limited resource protected by the NPS-HPL.

**Q. 9** **Objective:** Do you agree with the proposed objective of the NPS-NHD? Why or why not?

We agree with the intent, but the sentence structure is a little confusing. The following phrasing would be clearer.

*Objective: Risks from natural hazards to people, communities, the environment, property, infrastructure, and the ability of communities to quickly recover after natural hazard events, are minimised.*

The objective should also recognise the economic, social and environmental trade-offs of minimising risk. It will never be possible or viable with available resources to mitigate all risk. Deciding how much risk to mitigate and where will require trade-offs.

**Q. 10** **Policy 1 and definitions:** What are the pros and cons of requiring decision-makers to categorise natural hazard risk as high, moderate or low?

This approach is consistent with regional planning processes. The Proposed Otago Regional Policy Statement has five levels of risk (almost certain, likely, possible, unlikely, rare). The Waikato Regional Policy Statement has three levels of risk, and the Proposed Waikato District Plan has two levels.

The pro of this approach is that regional and district councils will have some flexibility to determine their local tolerance to risk and what fits into each of these categories.

The con is that local authorities may determine that nationally significant issues – like the production of fresh fruits and vegetables for domestic consumption – fall within a high-risk category.

The Council’s incentive is to reduce risk for themselves, not necessarily to protect resources for the good of the rest of the country. Some places like the Specified Vegetable Growing Areas in Horowhenua and Pukekohe provide vegetables for much of the country, and our national food security would be threatened if councils don’t take particular care to support those areas. As such, the natural hazards policy framework should provide for public goods like healthy domestic food production.

This approach starts with explicitly excluding non-habitable structures for primary production from the definition of “new development” and by amending Policy 5 to be clear that horticulture is not captured.

**Q. 11**      **Policy 2:** What are the pros and cons of directing decision-makers to assess the likelihood, consequence and tolerance of a natural hazard event when making planning decisions?

We support this methodology. Existing risk approaches incorporate the likelihood of event and the magnitude of effects as a function of vulnerability. These calculations are illustrated below.

$$\text{Risk} = \text{likelihood} \times \text{consequences}$$

Consequences are made up of the magnitude of the hazard event (Table 3) and the vulnerability of the activities or structures at-risk (Table 4 on following page). For instance, housing is more vulnerable because when people are sleeping at home, they will be less quick to react to a disaster. In the same vein, an orchard would be less vulnerable because people do not sleep there.

*Table 3: Examples of magnitude of hazard events*

<b>Hazard</b>	<b>Example of magnitude</b>
Flood	Depth, velocity of flood waters, volume of debris transported by flood
Earthquake	Magnitude on the Richter scale

Table 4: Examples of vulnerability

Activity	Vulnerability
Housing	People may be asleep when disaster event occurs, people of all ages present
School	Children present
Seasonal workers' accommodation	People may be asleep when disaster event occurs, English may be a second language
Old building	Not earthquake strengthened
Artificial crop protection structure (e.g., hail cover)	None, not a habitable structure

Risk assessments should be carried out by technical experts given the calculations and degree of expert judgement involved. Scientific knowledge is needed to determine the likelihood and magnitude piece of the risk calculation. The vulnerability piece, however, will require public input. Communities have varying tolerances for different consequences on different activities, and consequences will be different for non-habitable structures and buildings.

Individual primary sector businesses may have a higher tolerance for risk and should be allowed to continue working in a high-risk area so long as they do not expect compensation from the government after a disaster. An amendment to this effect is suggested under Policy 5.

**Q. 12**      **Policy 3:** What are the pros and cons of directing decision-makers to adopt a precautionary approach to decision-making on natural hazard risk?

The risk with a precautionary approach is that food production will be mistakenly impacted. Reducing available land for food production would reduce available supply, increasing prices of fruits and vegetables for consumers and contributing to a rising cost of living. It should be explicit that horticulture is an acceptable land use in high-risk areas, so that this is not a concern.

**Q. 13**      **Policy 4:** What are the pros and cons of requiring natural hazard risk as a matter of control for any new development classified as a controlled activity in a plan, and as a matter of discretion for any new development classified as a restricted discretionary activity?

This is an inequitable approach because the reasons why activities are controlled or restricted discretionary typically has nothing to do with natural hazard risk. For instance, vegetable growing might be a controlled activity because growers are irrigators, but another primary industry might not be controlled. Requiring just the horticultural activity to



reduce natural hazard risk places an undue cost on that business simply because they were the ones who needed a resource consent for an unrelated reason.

Instead, we should take a full-catchment approach to natural hazard management where upstream activities are managed such that they do not increase the risk on downstream activities, often low-emissions food production, through sediment and debris flows.

**Q. 14**      **Policy 5: What are the pros and cons of requiring planning decisions to ensure the specific actions to address natural hazard risk outlined in policy 5?**

The supply of fresh fruits and vegetables may be adversely affected by this policy. Fertile soils often coincide with flood plains. Strategic planning is needed to provide for the productive use of this land to contribute to food security. Horticultural structures and buildings are essential to growing fruits and vegetables. These structures are non-habitable. See Appendix B for images. Horticultural structures should be excluded from the definition of new development or Policy 5 should be amended to exclude them from this decision-making framework, as follows:

Planning decisions must ensure that:

- a) in areas of high natural hazard risk, new development is avoided unless the level of risk is reduced to at least a tolerable level or:
  - i. **the development supports primary sector business, and the risk is deemed tolerable by the business without compensation; or**
  - ii. the new development is not a new hazard-sensitive development; and
  - iii. there is a functional and operational need...

HortNZ supports that this policy differentiates “hazard-sensitive” developments and other types of development which may have a need to locate in an area of high natural hazard risk.

There is concern that if horticultural production buildings like packhouses or greenhouses were subject to the functional and operational need test, it would impose an undue burden and cost. According to legal advice HortNZ commissioned for our submission on potential amendments to the National Policy Statement for Highly Productive Land, “Whether a development or use of land is considered a functional or operational need will require an assessment on the facts of each individual scenario.”<sup>20</sup> This will add significant consenting cost to these activities and leaves open the potential that each territorial authority could interpret the functional or operational need differently. These activities are clearly a part of primary production and should be treated as such.

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<sup>20</sup> Robilliard, Rachel and Williams, Ben. “Memorandum: National Policy Statement for Highly Productive Land - Key Legal Considerations for Consultation on Potential Changes”. 30 October 2023. Chapman Tripp. Accessed online [https://www.hortnz.co.nz/assets/Environment/National-Env-Policy/Land/23.10.30\\_HortNZ-FINAL-Submission-on-NPSHPL-Amendments.pdf](https://www.hortnz.co.nz/assets/Environment/National-Env-Policy/Land/23.10.30_HortNZ-FINAL-Submission-on-NPSHPL-Amendments.pdf).

Natural hazard risk mitigations should prioritise human health and wellbeing. We propose a new policy which establishes the following tiered approach to prioritise interests for mitigations:

1. Risk to human life
2. Risk to human life-supporting activities such as food production and human drinking water supplies
3. Risk to property and other commercial activities

**Q. 15** What is the potential impact of requiring decision-makers to apply this framework in their decision-making? Will it improve decision-making?

See Q. 14

**Q. 16** **Policy 6:** What are the pros and cons of providing direction to decision-makers on the types of mitigation measures that should be adopted to reduce the level of natural hazard risk?

No specific comments.

**Q. 17** **Policy 7:** Does policy 7 appropriately recognise and provide for Māori rights, values and interests? Why or why not?

No specific comments.

**Q. 18** Can traditional Māori knowledge systems be incorporated into natural hazard risk and tolerance assessments?

No specific comments.

**Q. 19** Does the requirement to implement te Tiriti settlement requirements or commitments provide enough certainty that these obligations will be met? Is there a better way to bring settlement commitments into the NPS?

No specific comments.

**Q. 20** **Implementation timing:** Is the implementation timeframe workable? Why or why not?

No specific comments.

**Q. 21** What do you consider are the resourcing implications for you to implement the proposed NPS-NHD?

No specific comments.

Q. 22

**Implementation guidance:** What guidance and technical assistance do you think would help decision-makers to apply the proposed NPS-NHD?

Guidance should clarify the differences between how this framework applies to urban and rural activities.

Guidance should also be released to provide consistency in the meaning of tolerable risk, which is presumably mitigated risk. This guidance should clarify how residual risk after mitigation is treated differently than unmitigated risk. For instance, after buildings are earthquake strengthened, their residual risk decreases to a tolerable level, and planning rules do not insist that inhabitants retreat from the fault zone. The same approach should be taken to flood risk, with retreat being the absolute last resort.

## Appendix A: Amendment Table

Without limiting the generality of the above, HortNZ seeks the following decisions on the Proposed National Policy Statement for Natural Hazard Decision-making, as set out below, or alternative amendments to address the substance of the concerns raised in this submission and any consequential amendments required to address the concerns raised in this submission.

Additions are indicated by bolded underline, and deletions by strikethrough text.

Provision	Support/oppose	Reason	Decision sought
Definition: new development	Support in part.	The definition of “new development” should exclude horticultural structures such as artificial crop protection structures, crop support structures, and frost fans. These structures pose no risk to human life because they are buildings and cannot house people. Appendix B contains images of these structures.	new development means development: <ul style="list-style-type: none"> <li>a) of new buildings, structures, or infrastructure, <b><u>excluding non-habitable structures for primary production</u></b>, on land that currently does not have buildings, structures, or infrastructure located on it; or</li> <li>b) that is the extension or replacement of existing buildings, structures, or infrastructure, <b><u>excluding non-habitable structures for primary production</u></b>.</li> </ul>
Definition: new hazard-sensitive development	Support in part.	The pNPS-NHD definition of “new hazard-sensitive development” includes the term “residential dwellings”. The National Planning Standards includes a definition for “residential activity”, not dwelling. The NPS-NHS should use terminology consistent with the Planning Standards.	new hazard-sensitive development means a new development relating to any of the following: <ul style="list-style-type: none"> <li>a) residential <b><u>activities</u></b> <del>dwellings</del>, including papakāinga and retirement villages...</li> </ul>

New definition: primary production		A definition of primary production is needed to support an amendment to the definition of new development. This definition is appropriate because it comes from the National Planning Standards.	<p><b>primary production means:</b></p> <ul style="list-style-type: none"> <li>a) <b><u>any aquaculture, agricultural, pastoral, horticultural, mining, quarrying or forestry activities; and</u></b></li> <li>b) <b><u>includes initial processing, as an ancillary activity, of commodities that result from the listed activities in a);</u></b></li> <li>c) <b><u>includes any land and buildings used for the production of the commodities from</u></b> <ul style="list-style-type: none"> <li>a. <b><u>and used for the initial processing of the commodities in b); but</u></b></li> </ul> </li> <li>d) <b><u>excludes further processing of those commodities into a different product.</u></b></li> </ul>
Objective	Support	Revise sentence structure for clarity	Objective: The <del>r</del> <b>R</b> isks from natural hazards to people, communities, the environment, property, <del>and</del> infrastructure, and <del>on</del> the ability of communities to quickly recover after natural hazard events, are minimised.
Policy 5	Support in part.	If horticultural activities are captured by the decision-making framework as stands, there is a risk to the supply of fresh fruits and vegetables and to domestic food security. Horticulture should not be forced to retreat, especially from highly productive land, because it poses less risk to human life and provides an essential service for the country.	<p>Planning decisions must ensure that:</p> <ul style="list-style-type: none"> <li>a) in areas of high natural hazard risk, new development is avoided unless the level of risk is reduced to at least a tolerable level or: <ul style="list-style-type: none"> <li>i. <b><u>the development supports primary sector business, and</u></b></li> </ul> </li> </ul>

			<p><b><u>the risk is deemed tolerable by the business without compensation; or</u></b></p> <ul style="list-style-type: none"> <li>ii. the new development is not a new hazard-sensitive development; and</li> <li>iii. there is a functional and operational need...</li> </ul>
New policy: Effectiveness of mitigations		HortNZ recommends adopting another policy to direct how to assess the effectiveness of mitigations for lowering the likelihood of risk. This will clarify the interpretation of Policy 5.	<p><b><u>Mitigation measures must be evaluated on their ability to reduce:</u></b></p> <ol style="list-style-type: none"> <li><b><u>1. Risk to human life</u></b></li> <li><b><u>2. Risk to human life-supporting activities such as food production and human drinking water supplies</u></b></li> <li><b><u>3. Risk to property and other commercial activities</u></b></li> </ol>

## Appendix B: Images of Crop Support Structures<sup>21</sup>



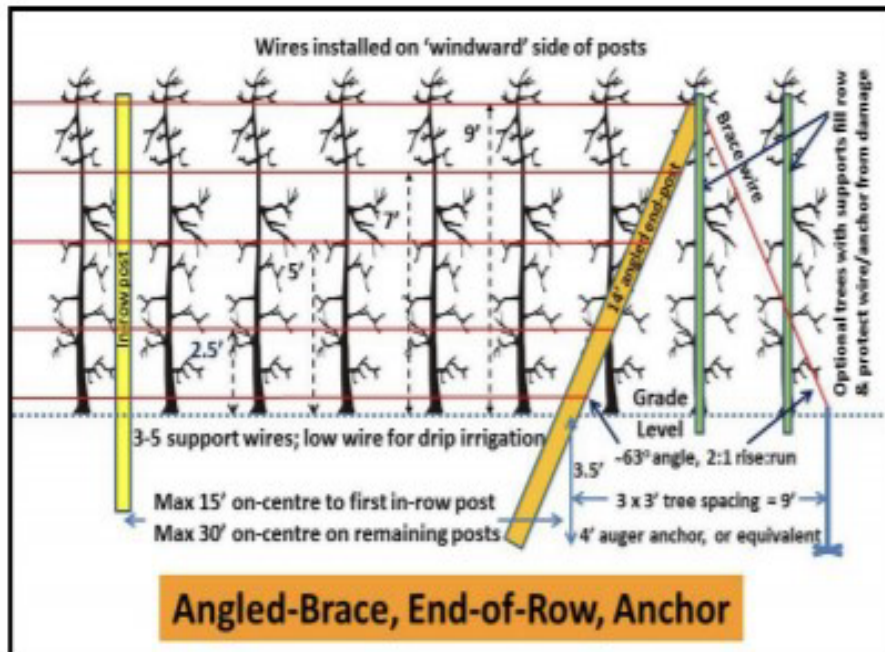
*Figure 3: Crop support structure - apples during autumn.*



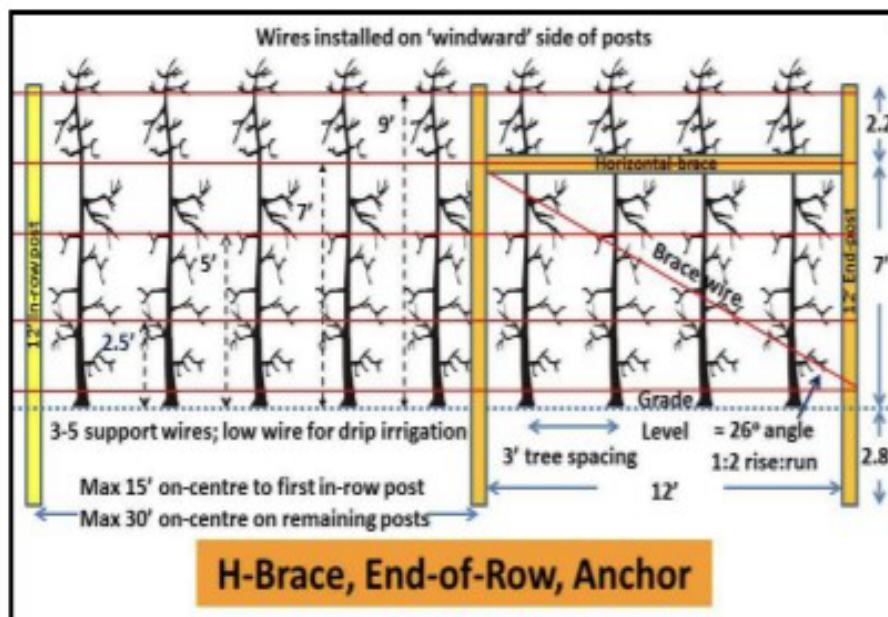
*Figure 4: Crop support structure - View from row end in spring (apples).*

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<sup>21</sup> HortNZ. "Images of Crop Support Structures". Selwyn District Council. Accessed online [DPR-0353 Horticulture NZ - Photos.pdf \(selwyn.govt.nz\)](https://www.selwyn.govt.nz/~/media/00000000-0000-0000-0000-000000000000/Horticulture%20NZ%20-%20Photos.pdf)



**Figure 14.** The ideal configuration in an angled-brace system is an equilateral triangle with 60° angles between post, wire and ground. Note the end-post is shown as 14 ft long to provide further anchorage and to provide enough height for the top wire. Also, the distance from the base of the post to the soil anchor is 9 ft. Two additional trees are planted with post supports at the end of the row to protect the tie-back wire system. (Note the optimum tree height of 10 ft with a 9 ft high wire for rows 11 ft apart). (Schematic: Hugh Freerer)



**Figure 15.** The 12 ft distance between the end posts provides a smaller angle for the brace wire and trees can be planted in this space. The schematic shows ultimate tree height of 10 ft with 9 ft high wire for rows 11 ft apart. (Schematic: Hugh Freerer)

Figure 5: Schematic of a Crop Support Structure.





*Figure 6: orchard workers picking apples that are grown on a crop support structure.*



*Figure 7: Robotic picker harvesting apples grown on a crop support structure (only trial phase).*

## Images of Artificial Crop Protection Structures



*Figure 8: Artificial Crop Protection Structure with black cover.*



*Figure 9: Artificial Crop Protection Structure with white cover.*



*Figure 10: View from under cover of Artificial Crop Protection Structure.*



*Figure 11: View from under an Artificial Crop Protection Structure with retractable cover.*