Request for changes

Implementation Guidance for the Risk Index Tool

17 May 2024

To: Sara Clarke, General Manager, System Enablement and Support

Name of Submitter: Horticulture New Zealand

Contact for Service:

Michelle Sands
General Manager Strategy and Policy
Horticulture New Zealand
PO Box 10-232 WELLINGTON
Ph: 021 610 653
Email: michelle.sands@hortnz.co.nz

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OVERVIEW

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PART 1

HortNZ's Role

Background to HortNZ

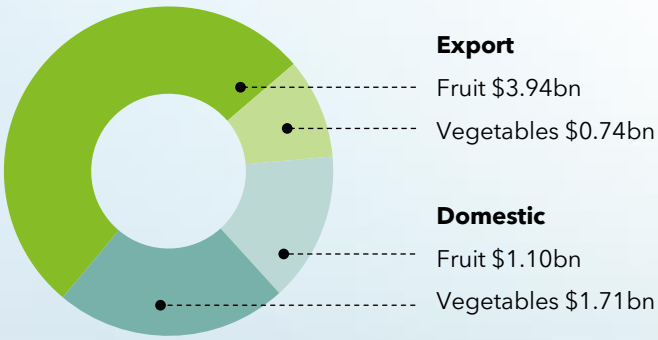
HortNZ represents the interests of approximately 4,200 commercial fruit and vegetable growers in New Zealand who grow around 100 different fruits and vegetables. The horticultural sector provides over 40,000 jobs.

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.



Industry value $7.48bn

Total exports $4.67bn

Total domestic $2.81bn

Source: Stats NZ and MPI

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.

PART 2

Summary

The guidance provides an important resource to ensure the Risk Index Tool (RIT) is used as intended and perverse outcomes from misuse are avoided. However, despite setting out limitations well, further detail is required to avoid misuse, particularly in relation to limit and regulation setting in regional plans.

- HortNZ supports use of the RIT as part of a multi-evidence approach but does not generally support it being used as a tool on its own.

- HortNZ considers that the guidance needs to provide more detail around using the RIT in policy and regulation to avoid unintended consequences. This includes the risk of targeting regulation towards higher risk land uses without consideration for the specific values and priority they provide (such as vegetable production for the domestic market).

- Despite cautionary wording in the guidance, there is a reasonable risk that rotational crops will face unnecessarily and burdensome regulation, including the frequent recertification through farm plans.

- HortNZ continues to have significant concerns that the RIT tool could be misused in regulation and given the poor calibration of the tool for commercial vegetable production, **requests that the guidance clearly states that the RIT not be used for commercial vegetable production at this stage**.

- Data privacy is an important consideration for users and HortNZ requests that a new section be included to highlight this and provide direction around data protection.

- HortNZ is working to provide additional data for horticulture, with different vegetable rotations on different soil and climatic conditions, to improve the data and potentially enable the RIT to be used with confidence for horticulture in the future.

PART 3

Discussion

1. Feedback on Risk Index Tool implementation guidance

HortNZ appreciates the release of the Implementation Guide as a draft, allowing parties affected by the future use of the tool the opportunity to provide feedback before the guidance is finalised. Getting this guidance right is particularly important as the misuse of nutrient management tools in regulatory settings has been proven to have far reaching and unintended consequences if applied incorrectly, or without adequate understanding of the limitations of the tool when applied to different land uses.

1.1. Support for a risk-based approach

HortNZ supports the use of risk based tools and considers the Risk Index Tool (RIT) is likely to provide a useful tool where is has been well calibrated to a land use, as is the case for pastoral farming. Using the tool to understand the risk depending on the underlying land and climate characteristics will bring greater understanding and the potential for better management decisions. It is also useful for understanding the relative risk within farms and blocks of different land uses and practices/mitigations on different soil and climate profiles. We also think the tool's ability to identify different intensities of land use through stocking rate and fertiliser data will help councils understand and address the different levels of risk related to land use intensity alongside land use change.

1.2. Load and value limitations

On page 9 of the guidance, a list of ways the RIT can be used as part of a multi-evidence approach is included. This includes 'preparing land and water regional plans'. Further details on strengths and limitations of setting regional plans are set out on page 12. Whilst the RIT has useful application for identifying within farm risks and may have some limited application in preparing plans as part of a wider set of tools, its limitations for use in limit setting needs to be more clearly acknowledged in the guidance.

The risk tool looks at nitrogen loss risk on a per hectare basis. It doesn't assess the load associated with the activity or the cumulative load within the catchment and its impact on the receiving environment. As an example, in some catchments, councils have failed to calculate and set load limits and associated regulatory controls, creating situations where the load generated by 'low N risk' activities may exceed the assimilative capacity of the receiving environment such that it cannot meet freshwater outcomes for N.

Another risk of the N risk tool is that it may support Councils to continue to adopt a limit setting process where nitrogen is adopted as the key contaminant for setting activity status, when in many cases it is not the most significant contaminant for the freshwater body[1].

[1] www.waikatoregion.govt.nz/assets/WRC/WRC-2019/Volume-1-Hearings-Panel-Recommendations.pdf

Nitrogen losses per ha is not a proxy for the intensity of loss for other contaminants. For example, activities such as vegetable production which have relatively high N loss per ha, have very low *E. coli* losses per ha. Dry stock farming, may have relatively low loss of N per ha, but higher losses of sediment and *E. coli*. The risk of an activity should consider multiple contaminants and the implementation guide should be clear that the singular focus on nitrogen means the tool must only be used alongside other tools.

Additionally, the risk tool does not consider the different values required to set limits, including the different 'use values'. Priorities for use must be set that achieve social, economic, cultural, and environmental outcomes. In weighing up these values a community may decide to prioritise some areas for land uses that have higher nitrogen risk scores but provide essential services or are the most economically efficient, such as domestic supply of fresh vegetables.

We acknowledge that the guidance generally does a good job of setting out the limitations of the tools including setting out limitations for its use in regional plans. But we consider misuse is likely without further, more explicit guidance in this area. HortNZ urges MfE to ensure councils are warned not to use the risk tool as a tool for setting or achieving catchment limits on its own, or even as the primary tool. We request that the following additional wording is provided in the section on 'Use for preparing regional plans' to avoid the tool's misuse.

Proposed amendment – Page 12 'Use for preparing regional plans'

Councils could use RIT assessments to review 'hot spots' of risk in their catchments, and for receiving environments. Identifying sources of nitrogen and their N-loss risk level within catchments could help determine the controls for improving or achieving freshwater quality in catchments and sub-catchments.

However, councils will need to use other tools to model and understand the contaminant loads of catchments and FMUs, set limits and set associated rules. As a cautionary example, in some catchments, councils have failed to calculate and set load limits and associated regulatory controls, creating situations where the load generated by 'low risk' (permitted and controlled) activities may exceed the assimilative capacity of the receiving environment such that it cannot meet freshwater outcomes.

Additionally, community decisions around which values, including 'use values', need to be made and reflected in the policies and rules. In weighing up these values, a community may decide to prioritise some land uses that have higher nitrogen risk scores but provide essential services or values. If rules are set simply based on risk scores alone, catchment contaminant load exceedance, or unintended consequences of restricting important land uses may occur.

Page 17 – Interpreting scores

Councils will need to:

- determine what the RIT risk scores mean in the context of each catchment, as the RIT does not define or categorise the risk scores

- compare risk scores between farms in a catchment, to understand the farm's position on the risk distribution curve for that catchment
- work with tangata whenua and communities to decide on the acceptable risk in a specific situation – for example, setting limits within a freshwater management unit.
- Consider multiple contaminants and avoid using N as a default proxy for other contaminants.
- Ensure that freshwater outcomes, priorities, and values, including 'use values', are considered alongside any risk score for a particular land use, noting that some higher risk land uses may be deemed appropriate to continue as permitted activities because they fulfil community outcomes e.g. fresh vegetable supply for the domestic market.

2. Limitations and risks with use of the Risk Index Tool for horticulture

2.1. Lower risk for fruit production with some limitations

Fruit production generally has a low nitrogen output and a simpler system than vegetable systems. The RIT is likely to show perennial horticulture as low risk. However, the tool is probably of limited usefulness to the fruit sector as a farm risk tool (which we consider to be its primary use). Orchards have static trees planted for a long time, so orchardists don't have the opportunity to modify activities across a farm. They are almost all located on HPL, which will have lower inherent biophysical risk. The main mitigations perennial horticulture can use are optimisation of fertiliser with plant uptake and optimisation of irrigation. However, the model does not have the resolution to assist growers with these activities. As most orchards have precise irrigation and fertiliser application already, the opportunity for refinement and improvements is not significant. This does present a possible risk should a council require broad scale percentage reductions in nitrogen, effectively penalising those with accurate baseline records, efficient systems and little headroom for improvement.

Crop specific N surplus calculations have greater sensitivity and functionality and are more useful for growers to manage their risk and optimise their plant uptake of N.

2.2. Higher risk for vegetable production with more limitations

2.2.1. CALIBIRATION CONCERNS FOR VEGETABLE PRODUCTION

Poor calibration is the main concern for the use of the Risk Index Tool for vegetation production. This is well documented in the guidance.

On page 18, under 'assumptions for leaching', the guide notes that testing against horticultural rotations has not occurred.

On page 22, it is noted that modelled vegetable risk index values were lower than expected compared to measured losses and so risk was 'boosted by a factor of five' as an interim fix until vegetable-specific transport factors can be investigated.

On page 24 of the guide, it stated that, 'The TWG outlined a method to account for nitrogen uptake by shallow-rooted crops. However, this was not used. Due to a lack of data, the group was unable to test whether the transport risk for nitrogen leaching under pasture was materially different from that under a range of crop rotations. We will consider this for future phases.'

The rationale for choosing a factor of five to multiple the vegetable risk index value does not seem to have any evidence base. Given the measured data points were from a limited data set for a specific location, there is a risk of applying it more broadly to other vegetable production areas. This risk should be highlighted in the guidance.

Production systems with rotations also have similar limitations. Whilst all these limitations are highlighted in the guidance document, the wording doesn't always relate well to the size of uncertainty or lack of calibration.

HortNZ requests that the following wording changes are made to better highlight issues of calibration.

Proposed amendment – page 18 in guide 'Assumptions for leaching'

- S-map's soil properties are suitable for the RIT. Some land areas have been mapped from the Fundamental Soil Layers to S-map layers.[21]
- The Agricultural Production Systems sIMulator (APSIM)[22] processes for water, carbon and nitrogen are adequate for the RIT.
- The nitrogen applied to a ryegrass/white clover pasture is a reasonable proxy of risk in a general sense, although testing against horticultural rotations (such as arable and vegetable production) is still required and preliminary analysis indicates that it may not be a good proxy due to the complexity of the N cycle within vegetable production due to flux in residues, mineralisation, fertiliser and crop uptake.
- Risk increases linearly with the amount of nitrogen applied to the soil.

Proposed amendment – page 22 Sensibility testing

The Technical Working Group (TWG) did sensibility testing to:

- look at the effect of different factors on APSIM transport outputs
- compare observations of N-loss against RIT risk estimates.

Sensibility testing looked at the effect of different factors on APSIM transport outputs using 156 farms, two of which were te ture whenua.23 The risk scores were consistent with the measured N-losses, except for vegetable rotations.

Vegetables were included in the analysis. Initially the risk index values were consistently lower than expected, given the observed (measured) losses. As the risk relative to observed losses was consistently under-predicted, risk was boosted by a factor of five as an interim fix until vegetable-specific transport factors can be investigated. It is acknowledged that this is a raw estimate and given the size and quality of the data set for vegetable rotations, risk scores should be viewed with caution and other risk estimating methods are needed[2].

[1] This approach is consistent with the findings of the Overseer whole-model review: 46360-Overseer-whole-model-review-Assessment-of-the-model-approach (mpi.govt.nz)

2.2.2. COMPLEXITY OF ROTATIONAL CROPS

Sustainable vegetable production operates on changing pieces of leased and owned land to manage soil health and pest and disease pressure[3]. The temporal and spatial complexity of rotational crops makes risk assessment of these crops more difficult. As the crop types change and rotate onto different land parcels their risk profile will inevitably change.

HortNZ is concerned that the changes in risk score during different rotations may trigger regulatory changes that result in an unreasonable regulatory and administrative burden for growers. Certified freshwater farm plans and the RIT must allow operators to manage their risk of N loss while changing location and crops within a catchment. Please note that HortNZ has no wish to obscure the true N risk of rotational crops, rather the intent is to address the risk of overly burdensome regulation.

The Risk Index Tool is proposed to assess risks or changes in risks in freshwater farm plans. Section 27 of the RMA applies to recertification of farm plans.

RMA Section 27 Recertification

Five-yearly requirement

(1)

A farm operator must amend their certified freshwater farm plan and submit it to a certifier for recertification not later than 5 years after the plan was last certified.

Twelve-month requirement following specified events

(2) However, a farm operator must amend and submit their certified freshwater farm plan, or part of their plan, to a certifier for recertification not later than 12 months after any of the following events occur:

(a) the farm has new significant inherent vulnerabilities:

[2] 46360-Overseer-whole-model-review-Assessment-of-the-model-approach (mpi.govt.nz)

[3] A useful graphic showing the complexity around rotations can be found in this story map Fresh produce and freshwater (arcgis.com)

(b) the farm acquires additional land to which different catchment context, challenges, and values apply:
(c) the farm operator undertakes significant changes in farming activities:
(d) the farm changes farm operator and the new operator does not adopt the existing certified freshwater farm plan.

Depending on a council's interpretation, a more frequent twelve-monthly recertification may be triggered by a risk score change. Such a change in score may be triggered for every phase of crop rotation or when a business turns over but does not expand.

The guidance acknowledges this may be a problem for users trying to block land leased for periods of less than a year and suggests they are blocked separately to allow them to be considered at the 'block score' level.

HortNZ considers this poses a real threat to the effective operation of vegetable cropping and requests that the guidance provides additional information for councils, making it clear that the risk assessment needs to be designed in such a way as assists growers to manage risks without triggering recertification for the normal variability of risk associated with the activity.

Proposed amendment to 'Production systems with rotations' - page 22

Because of the complex spatial and temporal variability of rotational cropping special attention is required when setting rules and freshwater farm plan recertification framework. Risk assessment and any associated rules around recertification for rotational cropping should be designed in such a way as assists growers to manage risks without triggering frequent recertification for the normal variability of risk associated with the activity.

2.2.3. RISK OF REPEATING OVERSEER PROBLEMS AROUND AVERAGING

On page 20 the guidance highlights that high-risk polygons could be hidden once the averaging to block-level scores occur. Averaging the score at farm level means higher risk areas are even more likely to be hidden. A suggested solution is presented in the guidance; however, this averaging function continues to present the ability for risks to be smoothed or averaged out; especially on farms and blocks that cover diverse land and soil types and associated high and low risk land uses.

HortNZ appreciates some vegetable rotations have a higher nitrogen loss risk on a per ha basis and does not wish to avoid addressing these risks. However, vegetable production is often on LUC 1 and 2, with little unproductive or lower intensity use land. As such, vegetable production systems are more likely to have higher average risk scores than those farms with mixed land, including cropping blocks with similar intensity to vegetable production, and uses if averaging is allowed for bigger, more diverse farms. This potential for councils to

provide an uneven playing field for farm level risk scores should be acknowledged in the guidance and councils directed to ensure it doesn't occur.

An example of this is in the Waikato Plan Change 1 where vegetable production had the highest nitrogen per hectare losses it only contributed 3% of the nitrogen load to the river therefore rules targeting vegetable production in this catchment can only ever achieve very minor changes in load to the river. Similarly, in PC1 the proposal to target N loss/ha production from dairy farms above the 75% percentile will result in a very small load reduction for the dairy sector given N leaching is log normally distributed, effectively capturing only a small number of farms.

Proposed amendment to 'Aggregating scores' on page 20

Add the following, 'Councils should be alert to this averaging risk, so small and homogenous farms are not disproportionately captured by the risk tool and regulation. A high risk per hectare nitrogen score should not be the only way councils seek to reduce load as part of the designing of limits.

3. High risk of using the RIT as a regulatory tool for vegetables production

On page 9 of the guidance, it sets out the possible uses of the RIT ranging from certifying freshwater farm plans to preparing land and water regional plans, importantly noting that this should be 'as part of a multi-evidence approach'.

The guidance then seems to contradict this statement by stating on page 27, in the section on 'Using the RIT and other tools' that councils have the option to use the tool 'as their only tool'. Whilst the guidance is careful not to impose the tools use on councils, it also leaves it up to each council to use as it sees fit. HortNZ acknowledges that the guidance provides multiple warnings around some of the limitations of the tool and risks of poor implementation, for instance around averaging risks and limitations for vegetable use. **Unfortunately, Hort NZ considers that, given the poor calibration of the tool for production vegetables it is considered too risky to leave open the possibility of councils using this tool for vegetables.**

This concern is particularly where this tool could trigger ineffective regulation. It could be used as a consenting stage gate requiring consent for higher risk score land uses without the adequate consideration of 'use values' and priorities required under the NPS-FM 2020, or trigger unnecessarily onerous recertification of Freshwater Farm Plans. It could also be used as a threshold rule where the risk score is required to not increase over time which would be problematic for vegetable production where there is a high degree of year-to-year variability due to crop rotation. All of these uses of the tool would have significant implications for the future domestic supply of fresh vegetables.

Several council plans already contain unworkable rules for fresh vegetable production that are being legally challenged. HortNZ anticipates that if councils do use the Risk Index Tool for vegetable production, it is likely that this will also face legal challenge causing cost, delay, and possibly perverse unintended outcomes. Until the tool is better calibrated for vegetable production, it seems wise to advise councils against using it, especially for regulatory purposes. It may be that it could be useful as a 'check' with other tools.

Please note that these concerns are limited to vegetable production and are not intended to undermine the tool's use for pasture-based uses. Please also note that even with better calibration, the risk of misuse of the tool as stated above is still likely if clear guidance is not provided.

Proposed amendment to 'The RIT and other nutrient management tools' on page 28

This guidance does not endorse any other tools or discuss their use for regulatory purposes.
However, we acknowledge that councils may use a range of tools to help with nutrient management and accounting requirements.
Councils are not required to use the RIT – it is optional. Those adopting the RIT as part of a multi-evidence approach may:

- use the RIT as their ~~only~~ primary tool for in-farm nitrogen risk management.
- use the RIT as a supplementary tool for preparing land and water regional plans.
- use other tools when these are more suitable than the RIT
- use the RIT as an indicator for more analysis, which may include other tools to investigate the potential for N-loss.

Proposed amendment – NEW SECTION HEADING 'Risk tools and commercial vegetable production'

The RIT is currently calibrated most accurately to pastoral based farming systems. Because of the uncertainty, limited data, complexity around rotations and likely poor fit for vegetable production it is currently not recommended that the RIT be used for assessing nitrogen loss risks for regulatory purposes for vegetables. Later iterations of the tool may include better data for vegetables and this advice may change.

4. Use as a data collection tool

Data has value. For growers supplying the domestic market this is particularly the case as they seek to protect their crop data from competitors in the same domestic market. Whilst it is appropriate to gather data for regulatory purposes, data sensitivities need to be respected. Councils should find ways to protect sensitive data from wider public viewing.

Some of the drop-down data fields require specific crop information that may not impact how the tool is calibrated. This could be misleading users that this level of granularity has a functional use and is helping define risks when it isn't.

Some crops are uncommon and will not have a data field meaning growers need to guess which crop in the drop-down menu has the closest properties to their own. Transparency and further user guidance on these matters around how the data is used would be necessary for growers.

HortNZ asks that the following guidance be provided to ensure sensitive data is protected.

Proposed amendment: NEW SECTION 'Data privacy'

Data privacy is an important consideration for user. Although regulatory data should generally be publicly available, some data is commercially sensitive and will need to be protected from general viewing. Where this occurs, it is appropriate to 'roll up' the data to a higher level to provide the necessary data privacy.

Request for inclusion in the Farmer/User guidance (not this RIT guidance): Provide guidance on how to record crops not included in drop down lists. This could be by providing a list of land uses/crop types that are not on the drop-down menu and provide the closest crop that should be substituted for it.

5. Potential for further calibration of RIT for horticulture

HortNZ has work underway to provide better data sets for horticulture, as well as working on a possible nitrogen-based tool. We would like to continue to work with MfE to ensure any research and data collection work we do is helpful in either creating a complimentary tool and/or providing the data to allow the RIT to be used effectively for horticulture, and in particular, vegetables.

We also understand you doing trials with the RIT on different land uses. It would be useful to do some live trials on vegetables to identify and work on solutions for any problems likely to occur.

Table of requested amendments for the RIT guidance from HortNZ

Without limiting the generality of the above, HortNZ seeks the following amendments to the RIT guidance, as set out below, or alternative amendments to address the substance of the concerns raised in this letter.

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

Relevant section of guidance	Requested change/addition to the RIT guidance
Page 12 'Use for preparing regional plans'	Councils could use RIT assessments to review 'hot spots' of risk in their catchments, and for receiving environments. Identifying sources of nitrogen and their N-loss risk level within catchments could help determine the controls for improving or achieving freshwater quality in catchments and sub-catchments. However, councils will need to use other tools to model and understand the contaminant loads of catchments and FMUs, set limits and set associated rules. As a cautionary example, in some catchments, councils have failed to calculate and set load limits and associated regulatory controls, creating situations where the load generated by 'low risk' (permitted and controlled) activities may exceed the assimilative capacity of the receiving environment such that it cannot meet freshwater outcomes. Additionally, community decisions around which values, including 'use values', need to be made and reflected in the policies and rules. In weighing up these values, a community may decide to prioritise some land uses that have higher nitrogen risk scores but provide essential services or values. If rules are set simply based on risk scores alone, catchment contaminant load exceedance, or unintended consequences of restricting important land uses may occur.
Page 17 – Interpreting scores	Councils will need to: • determine what the RIT risk scores mean in the context of each catchment, as the RIT does not define or categorise the risk scores

	• compare risk scores between farms in a catchment, to understand the farm's position on the risk distribution curve for that catchment. • work with tangata whenua and communities to decide on the acceptable risk in a specific situation – for example, setting limits within a freshwater management unit. • Ensure that freshwater outcomes, priorities, and values, including 'use values', are considered alongside any risk score for a particular land use, noting that some higher risk land uses may be deemed appropriate to continue as permitted activities because they fulfil community outcomes e.g. fresh vegetable supply for the domestic market.
Page 18 in guide 'Assumptions for leaching'	- S-map's soil properties are suitable for the RIT. Some land areas have been mapped from the Fundamental Soil Layers to S-map layers.[21] - The Agricultural Production Systems sIMulator (APSIM)[22] processes for water, carbon and nitrogen are adequate for the RIT. - The nitrogen applied to a ryegrass/white clover pasture is a reasonable proxy of risk in a general sense, although testing against horticultural rotations (such as arable and vegetable production) is still required and preliminary analysis indicates that it may not be a good proxy due to the complexity of the N cycle within vegetable production due to flux in residues, mineralisation, fertiliser and crop uptake. - Risk increases linearly with the amount of nitrogen applied to the soil.
Page 22 Sensibility testing	The Technical Working Group (TWG) did sensibility testing to: • look at the effect of different factors on APSIM transport outputs • compare observations of N-loss against RIT risk estimates. Sensibility testing looked at the effect of different factors on APSIM transport outputs using 156 farms, two of which were te ture whenua.23 The risk scores were consistent with the measured N-losses, except for vegetable rotations. Vegetables were included in the analysis. Initially the risk index values were consistently lower than expected, given the observed (measured) losses. As the risk relative to observed losses was consistently under-predicted, risk was boosted by a factor of five as an interim fix until vegetable-specific transport factors can be investigated. It is

	acknowledged that this is a raw estimate and given the size and quality of the data set for vegetable rotations, risk scores should be viewed with caution and other risk estimating methods are needed
Production systems with rotations	Because of the complex spatial and temporal variability of rotational cropping special attention is required when setting a rules and freshwater farm plan recertification framework. Risk assessment and any associated rules around recertification for rotational cropping should be designed in such a way as assists growers to manage risks without triggering frequent recertification for the normal variability of risk associated with the crop rotation including changes of crops on blocks over time, and movement on and off blocks over time a)
Aggregating scores' on page 20	Add the following, 'Councils should be alert to this averaging risk, so that small and homogenous farms are not disproportionately captured by the risk tool and regulation. A high risk per hectare nitrogen score should not be the only way councils seek to reduce load as part of the designing of limits.
The RIT and other nutrient management tools - page 28	This guidance does not endorse any other tools or discuss their use for regulatory purposes. However, we acknowledge that councils may use a range of tools to help with nutrient management and accounting requirements. Councils are not required to use the RIT – it is optional. Those adopting the RIT as part of a multi-evidence approach may: • use the RIT as their ~~only~~ primary tool for in-farm nitrogen risk management. • use the RIT as a supplementary tool for preparing land and water regional plans. • use other tools when these are more suitable than the RIT • use the RIT as an indicator for more analysis, which may include other tools to investigate the potential for N-loss.

PART 4

Proposed NEW SECTION	**PROPOSED NEW HEADING 'Risk tools and commercial vegetable production'** The RIT is currently calibrated most accurately to pastoral based farming systems. Because of the uncertainty, limited data, complexity around rotations and likely poor fit for vegetable production it is currently not recommended that the RIT be used for assessing nitrogen loss risks for regulatory purposes for vegetables. Later iterations of the tool may include better data for vegetables and this advice may change.
NEW SECTION 'Data privacy'	Data privacy is an important consideration for user. Although regulatory data should generally be publicly available, some data is commercially sensitive and will need to be protected from general viewing. Where this occurs, it is appropriate to 'roll up' the data to a higher level to provide the necessary data privacy.
Request for inclusion in the Farmer/User guidance	Provide guidance on how to record crops not included in drop down lists. This could be by providing a list of land uses/crop types that are not on the drop-down menu and provide the closest crop that should be substituted for it.