



# SUBMISSION

19 SEPTEMBER 2014

TO:

Hearing Commissioners, Canterbury Regional Council

ON:

## Variation 1, Canterbury Land and Water Regional Plan

BY:

Beef + Lamb New Zealand Ltd  
Submitter 52292  
Oral Submission



# Introduction

- 1.1 My name is Ben O'Brien and I am the General Manager Market Access and Advocacy, for Beef + Lamb New Zealand Ltd. (B+LNZ)
- 1.2 B+LNZ is an industry-good body funded under the Commodity Levies Act through a levy paid by producers on all cattle and sheep slaughtered in New Zealand. Its mission is to deliver innovative tools and services to support informed decision making and continuous improvement in farming systems, market access and product positioning.
- 1.3 B+LNZ is actively engaged in environmental issues that affect the pastoral production sector.
- 1.4 B+LNZ represents the sheep and beef farmers in the Selwyn Te Waihora Zone.

# Submission

## 2. Definition of Baseline

- 2.1 B+LNZ have requested an amendment to the definition of Baseline Land Use and seek that this be amended.
- 2.2 It is appreciated that ECan has published guidance and provided for a transition which addresses one of B+LNZ's concerns.
- 2.3 However, the other issue in B+LNZ's submission still remains. Consented dairy milking sheds are to be considered as operative for the purposes of calculating a Baseline N loss, but any other consented activity such as irrigation or building consents associated with significant changes in intensity and commitment of capital are not.
- 2.4 No explanation as to why one form of pastoral farming is favoured over all other forms of land uses is given in the s42A report. Such an approach appears to be discriminatory and against the principles of natural justice, favouring one land use over all others.
- 2.5 With regard to the issue of amendments to the definition of the nitrogen baseline and the ability to amend this definition, regard must be had to the following sections of the pLWRP.

### **2.78 Development and review of sub-regional sections**

Policies 4.9 to 4.10 detail how and when a sub-regional section will be developed, what parts of this LWRP are able to be changed and what matters must be considered. In addition, Appendix 2 to the RPS 2013 contains direction for the development of sub-regional sections.

Priority for the development and review of sub-regional sections is to be given to catchments where the regional in-stream fresh water outcomes described in the Objectives in Section 3 and Policies 4.1 – 4.6 Table 1 to Policy 4.1 are not being met.

4.9 Reviews of sub-regional sections will:

- (a) be in accordance with Appendix 2 of the RPS 2013; and
- (b) identify and provide for the social, economic, cultural and environmental values of each catchment; and

- (c) have particular regard to collaboratively developed local water quality and quantity outcomes and methods, and timeframes to achieve them, including through setting limits and targets; and
- (d) establish methods and a timeframe to phase out any over-allocation where overallocation of water for abstraction from surface water catchments or groundwater zones or nutrient discharges has been determined.

4.10 Reviews of sub-regional sections will not make any changes to the Objectives or Policies 4.1-4.10 of this Plan, except that catchment-specific outcomes and limits may be developed to implement the objectives and policies of this Plan

- 2.6 Section 4.10 makes clear the elements that cannot be altered through the sub-regional processes - i.e. the Objectives or Policies. The definitions are neither objectives nor policies and therefore could be capable of amendment through the sub-regional process.
- 2.7 Amending the definition of nitrogen baseline to recognise the farming operations within the catchment and their current or likely state within the next 2 years (the time usually given for consent activity to commence) and the impact on the catchment load, can be regarded as 'catchment-specific' and therefore clearly within the reach of the sub-regional process.

### 3. Baseline Land Use

- 3.1 Policy 11.4.13 (b) and the associated rules, cannot be met as the policy refers to:

“(b) Where a property’s nitrogen baseline loss calculation is greater than 15kg of nitrogen per hectare per annum, meet the Good Management Practice Nitrogen and Phosphorus Loss Rates for the **property’s baseline land use.**”

*Highlights are the submitters.*

- 3.2 The pLWRP does not contain a definition of a “property’s baseline land use”. As no there is no definition, this policy and associated rule cannot be complied with.
- 3.3 A property baseline land use cannot cover a four year period to follow the nutrient baseline approach.
- 3.4 Farm enterprises vary in their systems or land use mixes from year to year according to markets, climate, personal circumstances and a host of other individual reasons. An unknown number of farm enterprises will have changed farm systems or the balance of stock types, or stock to crop mix, making it impossible to define a single baseline which will apply to the numbers developed under the Matrix of Good Management project (MGM).

### 4. Relationship between N loss and P loss

- 4.1 Consideration of Policy 11.3.13(b) needs to address why a nitrogen (N) loss rate is the trigger for a requirement to meet phosphorus (P) loss numbers. While the conditions that cause leaching loss are similar for the two nutrients, most P is lost through overland flow related to slope, which is very poorly correlated with N leaching loss.
- 4.2 The most appropriate way to manage P loss is through farm specific actions developed as part of the Farm Environment Planning process.

## 5. How MGM numbers are used

- 5.1 Consideration needs to be given as to how suitable the Loss Rates calculated through the MGM project are for use as compliance limits, rather than indicators. While the MGM project has used actual farm systems as the starting point for the modelling, for sheep and beef and other mixed farming systems, the permutations are as varied as there are farms.
- 5.2 The ability to require compliance or to prosecute on the basis of not meeting the numbers in the look-up table may need to be looked at. There are implications around a farmer demonstrating the Good Management Practices specified are in operation on a farm, yet the N loss for the property is higher than the MGM table number. This is quite possible, given that a wide range of actions and circumstances will affect an N loss number, many of which are not defined or included in the definition of Good Management Practice.
- 5.3 B+LNZ submits that including MGM look-up tables into the pLWRP as this Variation does, is not beneficial and may generate some unintended consequences. Good Management Practice will change over time as new knowledge and technology becomes available. In order to reflect this and to incentivise land users to meet the new GMPs, constant changes to the look up tables will be required, resulting in constant plan changes. The alternative is that only the specified GMPs are implemented, discouraging a move to best management practice and innovation and the opportunity to achieve greater N loss reductions.
- 5.4 It would be far more effective to hold any MGM look-up tables outside the plan process to act as signals or trigger points within an implementation programme.

## 6. Overseer

- 6.1 B+LNZ agrees that Overseer is the best available tool for the calculation of N loss. However there is a particular concern around Overseer's treatment of lucerne, and lack of inclusion of the newer forages. The Overseer 101 Workshop brochure identifies that "model uncertainty will be greatest in conditions where there are no, or few, data for calibration e.g. Lucerne." It goes on to note "NO RESEARCH has been conducted to measure N leaching losses from Lucerne" (their emphasis). Overseer does not currently include 'scavenging' of urine N below 0.6m in grazed pasture i.e. deep rooting species can take up N at depth. Given that Lucerne is used for N remediation elsewhere this could have a significant impact. (Russelle, M.P. et al. 2007)
- 6.2 While Overseer will continue to be enhanced over time, there are priorities for the work programme that are likely to see refinements in lucerne and novel forages not addressed until after the requirement to meet GMP N loss numbers is in force.

## 7. Reductions in N

- 7.1 Policy 11.4.13(b) requires only farms with an N loss over 15kg N ha/yr to adopt the Good Management Practices defined by industry. Good Management Practices are those that every farmer should be applying regardless of size, location or current N loss of their operation. This has been a fundamental starting point in the debate around nutrient allocation and approaches to managing water quality.
- 7.2 Clarity is needed around the requirements of Policies 11.4.14 and 11.4.15 as to when reductions become required and the relationship with Rule 11.5.9  
Policy 11.4.14 states that "**From 1 January 2022**....require farming activities to... make the following further percentage reduction in nitrogen loss rates...".

Policy 11.4.15 states that “In circumstances where the reductions required in Policy 11.4.14(b) are unable to be achieved **by 2022**, any extension....”.

- 7.3 It would appear that there is a maximum of 12 months for reductions to be made before an exemption is required. This is quite clearly not achievable.
- 7.4 Rule 11.5.9 appears to require that the % reductions become applicable from 2017.
- 7.5 Policy 11.4.16 provides that having made the % reductions set out in 11.4.14, from 2022 to 2037 – a period of 15 years, a farming operation can continue to leach in excess of 80kg N / ha until 2037, having made a 30% reduction in N loss from 115kg N or more.
- 7.6 B+LNZ greatly appreciates the corrections made to the percentage reductions required, but notes that the numbers developed have not been agreed to by industry. Rather industry agreed to a percentage reduction being needed after GMP, but the details of how this was to be calculated and the numbers themselves have not been agreed to. Mr Andrew Curtis, Irrigation New Zealand makes reference to this in his evidence.
- 7.7 There are several difficulties that will arise from the whole approach that will see it unworkable.

## 8. Definitions of Farming Types

- 8.1 It is a characteristic of New Zealand farming systems that they are immensely varied and encompass a very wide mix of livestock and crop production systems.
- 8.2 While many dairy farms are single farming enterprises, there is still a significant minority that are part of a wider farming enterprise within one property e.g. dairy, sheep, beef, cropping and forestry.
- 8.3 Sheep and beef farms are incredibly varied with a mix of farm systems, almost as many as there are farm enterprises. Significant numbers of farm enterprises run any combination of dairy stock of some description, sheep and/or beef cattle, fodder and cash cropping and some deer. Arable farm enterprises include livestock grazing in their rotations.
- 8.4 Irrigated area varies from 100% irrigated or partially irrigated operations on the plains to farm enterprises that have some irrigated paddocks, such as valley floors in hill and high country farms.
- 8.5 Farm enterprises encompass considerable variation from year to year, depending on markets, climate and a host of other factors. As a result the mix of activities can vary significantly, with more cropping one year and more sheep or dairy grazing in the next. Different types and classes of stock run on different areas at different times of the year as well as stock following cropping within the same year.
- 8.6 The classifications in the Land Use maps used in catchment planning rely on loose descriptors, never intended to be used in a compliance regime by those who may have volunteered the category they would place themselves in. It would not be unreasonable to expect that the most favourable reduction rate would drive any requirement to specify a farm type in the future.
- 8.7 Using a standard % reduction for a particular farming system as the basis of reductions, whilst based loosely on the economic impact of mitigations in order to ‘share the pain’ equally has the potential to cause significant hardship and inequity, based as the calculations were on averages and not on specific circumstances.
- 8.8 Dairy operations located on low leaching soils that have already made significant changes to their systems and introduced mitigations often at significant cost and resulting in N losses only

a little above the 15kg de minimus, can rightly feel aggrieved that they are still required to make a 30% reduction on their N losses.

- 8.9 Given that the reductions are not required to be undertaken until 2022, the use of 2013 financials as the basis for calculation may not reflect the financial positions of the various sectors fairly. Product prices, national and global markets and financial systems could alter significantly in that time.

## 9. Alternative Allocation Methodology

- 9.1 Section 11.173 of the s42A report states that in the absence of an alternative path set out by submitters that will still enable the target to be met, it is recommended to maintain the present policy framework.
- 9.2 This appears to be at odds with other parts of the report that note that a significant number of submitters challenged the establishment of rules based on existing land uses, and a number of submitters suggest some form of alternative allocation methodology.
- 9.3 B+LNZ was one of those submitters and advocated for the adoption of one of the variations outlined in the rejected Option 3 in the s32 report, based on variations of Natural Capital.
- 9.4 The Zone committee's key considerations were the "economic and social implications of an allocation mechanism for the entire sub-regional area. On this basis, a mechanism that had the least impact on existing land users, and did not rely on trading was considered a more appropriate model to follow in the sub-regional area."
- 9.5 Unfortunately in an effort to have the least economic impact on existing users through grandfathering existing high leaching activities, there has been a significant adverse economic impact on the low leaching land uses, in the form constraints on their farming systems and through the devaluation of their land asset. Land with low N loss baselines will have a lesser value from now on, whilst land with high N loss baselines will have greater potential and therefore be valued more highly.
- 9.6 If it is acceptable to wait until the Good Management Practice loss rates are available for P, then such an approach should also be acceptable for nitrogen. Once these are available then a more informed decision can be made on the level of N loss reduction required. To require reductions in nutrient loss from an unknown starting point (GMP) would seem unwise and contrary to natural justice.
- 9.7 The s42A report notes: "While the equal allocation model or some other mechanism suggested, have some positive aspects and potentially are more equitable, there are significant risks and administrative issues with a catchment of this size. Most alternatives would require some form of accounting and trading regime to be established in order to be successfully implemented, and at this point in time there does not appear to be a simple solution that would enable equal allocation or one of the other models of allocation to be easily adopted. Further, the present structure of the pLWRP and variation 1 is based on land use rules and consents, for which trading and transfer are not anticipated by the RMA."
- 9.8 Approaches that have some positive aspects and are potentially more equitable would surely be worthy of further investigation and consideration. Any approach that is not equitable, at least over the long term, will not persist. Far better to take a little more time and build a fair and equitable approach that is sustainable in the long term.
- 9.9 Catchment accounting is a statutory requirement for the Regional Council and where limits and consents are required there must be a means to measure compliance. Therefore it is

disingenuous to suggest that alternatives be dismissed because there will need to be accounting systems. ECan is currently working on reporting and accounting systems which include reporting requirements for all land users over a certain property size.

## 10. Trading

- 10.1 Trading systems, although good in theory, have yet to be proven for diffuse to diffuse agricultural nutrient losses. The only cap and trade system in operation for controlling agricultural pollution according to the OECD (Shartle 2012) is the Lake Taupo example. The Lake Taupo example is not widely regarded as a great success domestically, in terms of equity of outcomes or the economic or social disruption. It has also been supported by \$81 million of Government funding to purchase and retire N allocation and other supporting works.
- 10.2 As is now well documented, considerable land use change from pastoral farming, primarily sheep and beef to forestry, has occurred. The adverse impacts on large parts of the community have been significant.

## 11. Natural Capital

- 11.1 Given that the issue of allocation is complex, it is reasonable to expect the solution may also be somewhat complex. There is a solution that has the advantage that both the High Court and a Board of Inquiry have considered it and decided in its favour. That approach is Natural Capital using Land Use Capability as its proxy. This approach is now in place in Horizons and is to be introduced in Hawke's Bay.
- 11.2 Issues relating to implementation of the approach in Horizons relate to the level of over-allocation being considerably higher than initially calculated, not the allocation system being faulty.
- 11.3 The s42A report notes "The establishment of a modified grand-parenting approach, based on existing land uses, is consistent throughout the pLWRP, and enables the future setting of per property discharge limits based on the work presently underway to establish good management practice nitrogen and phosphorus limits."
- 11.4 B+LNZ disagree with this assessment. It contradicts directly the Zone or Sub-regional limit setting processes underway which encompass not only the water quality outcomes for a catchment or zone, but also the allocation methodology.
- 11.5 Fundamental changes in the nature of the allocation regime are not likely to be beyond the scope of submissions and this hearing process. This is evidenced by the Board of Enquiry for Tukituki decision.
- 11.6 It is suggested that hearing Commissioners for Variation 1 have a precedent to follow in moving away from an inequitable approach to a more equitable and sustainable long term approach, which supports and enables a productive primary sector as well as meeting community expectations for water quality.
- 11.7 In support of the proposed approach consider that a 100% irrigated beef operation on an extra light (leaky) Hororata soil is estimated to currently leach 94.8kg N ha/yr. (ECan report No. R14/19)
- 11.8 If this farmer moved to another part of the zone and a deep Lincoln soil, then the expected N loss would be 18.0 kg N ha/yr, and on a poorly drained Lincoln soil it would be 9.0kg N ha/yr.

- 11.9 A 100% dryland sheep operation on the same extra light Hororata soil would start at 14.0kg N ha/yr. On a deep Lincoln soil it would leach at 7.0kg N ha/yr.
- 11.10 A 5 cow/ha winter off, irrigated operation on an extra light Hororata soil is estimated to leach 132.4kg N ha/yr. Moving to a deep Lincoln soil the loss is estimated at 32.0kg N ha/yr, and a poorly drained Lincoln soil the loss is estimated at 16kg N ha/yr.
- 11.11 On the other hand, viticulture on an extra light Hororata soil has an expected N loss of 1.6kg N ha/yr, whilst on a deep Hororata soil it has an expected N loss rate of 18.4kg N ha/yr and on a deep Lincoln soil it has an expected N loss of 17.7kg N ha/yr.
- 11.12 Irrigation and additional fertiliser are not the only route to increasing production. Novel and improved dryland forages already provide significantly improved available feed e.g. lucerne, chicory, and plantain. Lucerne is best grown on free draining soils as it does not tolerate poor drainage.
- 11.13 One of the most effective and efficient ways of reducing N loss is to move from high leaching soils to low leaching soils, targeting activities to soils best able to manage N loss. This will allow the overall productivity of the catchment to be maximised, with mitigation enhancing production potential. Such a move would be undertaken over many years.

## 12. Flexibility of Land Use

- 12.1 The wisdom of restricting land use to current use needs to be considered when it can result in highly productive land being effectively locked in to particular land uses. For example commercial forestry has loss rates of 3kg N ha/yr or less. Where that forestry occurs on highly productive land as a result of decisions made 20 or more years ago, the ability to change land use to a more productive use will be lost until a change to the allocation system is made at some point in the future. For example, the harvesting of commercial forests and conversion of land to high producing dairy farms that has occurred recently in the central North Island.
- 12.2 Locking in a particular land use will prevent the optimising of the country's primary sector, and have significant less direct impacts. Climate change and the land use that needs to be adopted to mitigate greenhouse gas impacts must have the ability to move to the most optimal locations.

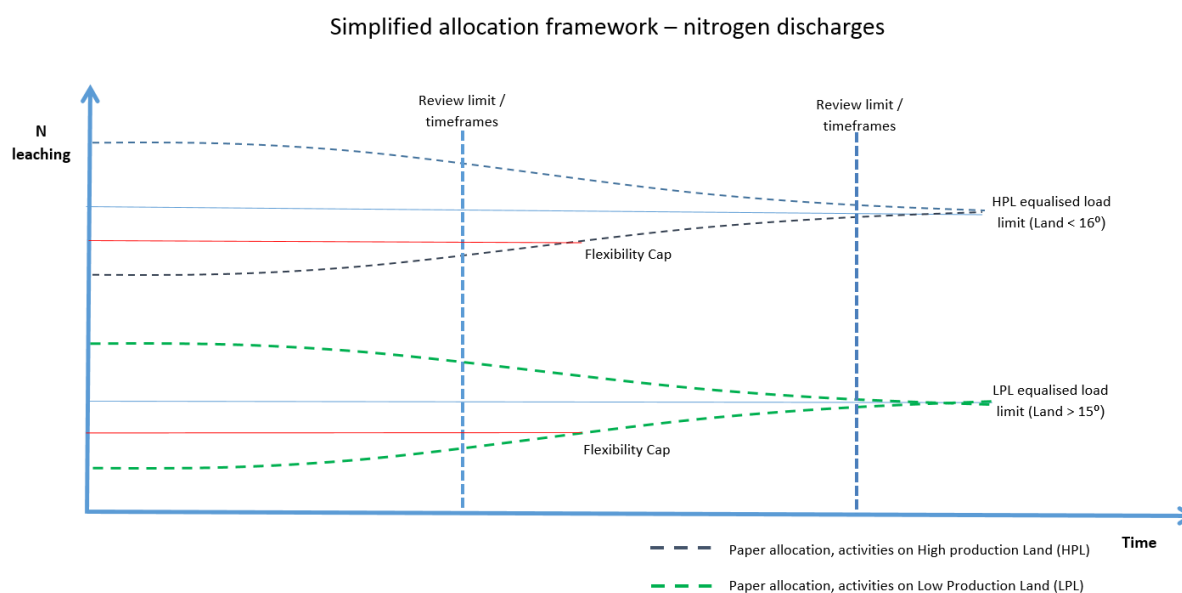
## 13. Industry On Notice

- 13.1 The s42A report in s11.146 – 11.150 recognises that it is potentially more efficient and effective to wait for a process to develop a cohesive set of provisions, in relation to P loss numbers but rejects the same approach for N loss numbers. "A policy position requiring that a substantial further reduction in nitrogen losses (20%) beyond good management practice, will be required for each farm in the future to meet the nitrogen loss target could be an alternative to listing percentages for different industries."
- 13.2 There is concern that the approach above does not put industries 'on notice' about the likely future position, and therefore may encourage additional investment that does not account for the regulatory uncertainty.
- 13.3 It also has the consequential impact of not allowing the setting of longer term nutrient loss limits in resource consents, requiring frequent consent reviews and consequent uncertainty.
- 13.4 It is safe to say that B+LNZ and the other primary sector groups are well and truly 'on notice' about the need to manage water quality and nutrient loss.



## 14. An Alternative Approach

- 14.1 B+LNZ would like to propose an alternative approach to the grandfathering contained in Variation 1, based on the productive capability of the land, which will provide flexibility for land use, equity in allocation of N loss, and be sustainable into the future.
- 14.2 The significant part of the approach is that it occurs over a timeframe that allows transition from the current position, to a long term stable system, balancing nutrient reduction with impacts on economic and social impacts. There is often a perception that all limits must be met immediately, however by providing sufficient time for farmers to adjust, it is possible to achieve the water quality outcome the community wants.
- 14.3 The graph below indicates how the approach could work over time. Note only two classes are used for simplicity of graphing.



- 14.4 LUC based N loss limits would be developed following revised modelling of the catchment flows and load calculations. The modelling undertaken for a group of primary sector groups, of which B+LNZ is one, can assist in this respect. This evidence is presented by others including Horticulture New Zealand.
- 14.5 Activity status would reflect the level of compliance with NDAs, and incentives could be used to encourage the meeting of an NDA earlier than planned.
- 14.6 A possible scenario is attached as Appendix 1.

## 15. Conclusion

- 15.1 B+LNZ thanks the Hearing Commissioners for their time and are happy to answer any questions now or at some other time, and to work with ECan to develop further the approach proposed above.

**2014/2015**

S T-W Zone NDAs determined using LUC model

**2015**



**2017**

GMPs in place, Property Specific NDA identified

Band 1	Band 2	Band 3
Meets NDA	Reduce to Meet NDA Short term 5- 10yrs	Reduce to Meet NDA Long term 15 – 20yrs
Property specific FEP	Property specific FEP	Property specific FEP
Overseer	Overseer	Overseer
Reporting Annual – 3yrly	Property specific N reduction schedule	Resource consent Property specific reduction schedule
	Annual Reporting 5 yearly review of progress	Reporting Annual

## REFERENCES

Lillburne, L., Webb, T., Robson, M., Watkins, N. 2013. Estimating nitrate-nitrogen leaching under rural land uses in Canterbury (updated). ECan Report R14/19

Russell, M.P., Lamb, J.F.S., Turyk, N.B., Shaw, B.H., Pearson, B. 2007. Managing nitrogen contaminated soils: Benefits of N<sub>2</sub>-fixing alfalfa. *Agronomy Journal*, **99**, 738 - 746

Shartle, J. 2012. Water Quality Trading in Agriculture. OECD