



## HEARING EVIDENCE: Variation 1 Canterbury Land and Water Regional Plan

*Date:* 14/10/2014  
*Name of Submitter:* Irrigation New Zealand Incorporated  
*Postal Address:* 6 Sonter Road  
Wigram  
Christchurch 8042  
*Telephone:* 03 341 2225  
*Mobile:* 027 4966 314  
*E-mail:* [acurtis@irrigationnz.co.nz](mailto:acurtis@irrigationnz.co.nz)

A handwritten signature in black ink, appearing to read "Andrew Curtis".

(Andrew Curtis, CEO IrrigationNZ)

### OVERVIEW of INZ

- IrrigationNZ (INZ) is a national body that promotes excellence in irrigation.
- INZ represents the interests of over 3,600 irrigators (irrigation schemes and individual irrigators) totaling over 350,000ha of irrigation (approximately 60% of NZ's irrigated area).
- INZ also represents the interests of the majority of irrigation service providers (over 150 researchers, suppliers, designers, installers and consultants).
- INZ has a strong membership base in the Selwyn-Waihora zone with widespread support from both irrigator user groups (Dunsandel Ground Users and Ellesmere Irrigation Society), Central Plains Water Ltd and other individual irrigators. Membership currently totals approximately 55,000ha (60%) of the 95,000ha irrigated.

### Nitrogen Baseline

- The present interpretation of the Nitrogen baseline rule has created issues for some INZ members. Those whom have intensified their operations between 2009-13, particularly where that involved capital investment on farm (irrigation infrastructure for example), now find themselves with significant challenges based upon the averaging approach. Their new operation is unable to meet their baseline N-loss number and thereafter future Good Management Practice (GMP) expectations.

## Nutrient Management

- It is important the limitations and assumptions of models are well considered. This includes those used for catchment scale water quality analysis alongside those used to predict nutrient losses from farming systems.
- In terms of water quality we are at an early stage in understanding the complexity of the natural environment, both nutrient fate and interactions within a catchment and losses from farming systems themselves. INZ likens it to where our understanding was at 20 years ago for water quantity modelling.
- It is also important farming systems remain able to cope with commodity price shocks. You can't invest in environmental mitigations if your business is not profitable'. This is particularly important when requiring nutrient reductions beyond the GMP 'sweet spot'. Any farm mitigation analysis therefore needs to understand the consequences of a range of commodity prices.

## Catchment Models

- For complex catchments like the Selwyn-Waihora the spatial impact/fate of nutrients upon the desired water quality outcomes need be considered. This will ensure a 'best bang for buck' approach can be implemented. Nutrient loss mitigations that take farmers beyond GMP involve considerable capital investment. We therefore need to ensure we are targeting the source of the issues within a catchment, and avoid putting in place broad brush requirements where capital may be directed to mitigations that will have little impact upon the water quality outcomes.

## Farm Models - OVERSEER

- When GMP's are listed it becomes apparent that some can only be accounted for in a crude manner within OVERSEER, if at all. For examples -
  - nutrient losses from farm tracks – a default inclusion (automatically considered)
  - grass strip riparian strips – yes/no tick but doesn't reflect actual scenario (width, slope...)
  - irrigation – 3 system types but no management consideration
  - no allowance of grazing strategies for higher risk land within a farm (graze high risk last)
- OVERSEER also assume that all farm management practices being performed are at a 'good' level. A bad practice can be entered (applying nutrient at the wrong time of year for example) but it assumes that its application is to a GMP standard (calibrated equipment resulting in the desired application rate being broadcast evenly across the paddock).
- The above points mean the perceived starting point (the modelled status quo) is likely not truly reflective of where we are actually at. It also means there are many good management practice gains on farm to be made that cannot be accounted (given credit) for.
- It should also be noted that OVERSEER is a relative change model using long term average data – it is not an annual compliance tool.

## Approach to Managing Nutrients

- Over the next 10-15 years the limitations and assumptions of a modelled approach for catchment limits and farm nutrient losses need be well considered in 'managing within limits' decision making.
- Following a hard wired 'all the nutrient losses off farm have to add up to the load limit' creates numerous challenges. Whilst theoretically simple and therefore attractive to policy makers, to prevent perverse outcomes decision making would need to allow for -
  - a dynamic environment for farm and catchment limits - due to new science and continuous model upgrades. Without this farmers will become non-compliant overnight without having made any changes to their farming system! We need to provide a degree of certainty for land users within the inherent uncertainty of the science and tools at their disposal so they are enabled to invest in improving performance
  - new technologies / innovations - tools will always be 3-5 years behind innovative practice how do we encourage there more timely uptake
  - uptake of GMP's that are not included within the model inputs and thus outputs – many of these are crucial for achieving the water quality outcome or may create the 'best bang for buck' in terms of mitigations.
  - confidence that what is being stated in the model output is a reflection of what is actually occurring on farm – the farm plan and it's audit
- It should be noted however, that INZ believes 10-15 years from now, particularly in catchments like the Selwyn, both the models and their inputs (catchment and farm scale) will have stabilised enough to provide sufficient certainty to move to a nutrient numbers (allocation) approach.
- IN the case of variation 1 the above issues highlight the need to -
  - decouple the hard link between the load limit and farm losses, allowing individuals seeking change to apply for a consent and state their case using a range of tools/information – not be purely restricted to their fit with an OVERSEER nitrate number. An informed decision can then be made on the weight of evidence provided. Consistent technical capability to support consent decision making is essential for this, as was suggested in the primary sector nutrient management approach in the ZIP addendum.
  - create a compliance regime that has a focus on the implementation of GMP's on farm through and audited Farm Management Plans, not a number. This is key as this is what will drive changes in behavior and thus water quality outcomes.
  - combine the above with some land use management/practice rules that discourage future inappropriate practices in high risk environments. In reality there are three key factors that if well managed will go a long way to improving on the status quo; irrigation practice; riparian management; winter management of livestock.

