



The Presenters

Dr Tanira Kingi (Emeritus Scientist, Scion)

Tanira is a research advisor and an emeritus scientist (Scion). His research has focused on developing multi-model frameworks that assess the economic and environmental impacts of land use change to meet environmental regulations. Tanira has been appointed to several government advisory groups on land and water policy development and is a Climate Change Commissioner.

Dr Phil Journeaux (AgFirst)

Phil is a consulting agricultural economist at AgFirst. Phil's work involves economic research and analysis, agricultural extension services and technology transfer. Phil has been working with the NZAGRC for the last seven years in modelling on-farm mitigations/offsetting as to their impact on greenhouse gas emissions and profitability, and in delivering climate change training for rural professionals. Phil is a life member of the New Zealand Agricultural and Resource Economics Society.

Presentation

Takahuri Whenua: Collective action to mitigate on-farm emissions

YouTube video link: <https://youtu.be/sGZpZhYn0cY>

Question & Answers

Thank you for your participation in the webinar. This document contains the questions that were not able to be answered during the webinar.

Please note: these answers are provided by the presenters and do not represent the views of the NZAGRC or MPI.

Forestry to offset beef production: do you consider forests to continually offset emissions, or is there a time limit?

It depends on the ETS forestry regime. If the forest is registered under the averaging scheme, then there is a set time-period in which carbon sequestration can be claimed, e.g., for pines it is 16 years. If further carbon offset is required, then further forestry would need to be planted.

If the forest is registered as a permanent forest, then sequestered carbon can be claimed over the lifetime of the forest.

What assumptions have you made about cattle methane mitigation technologies and the timeframes that they may be available? How do these assumptions affect the land use comparisons?

These mitigation technologies have not been considered in the project, as their efficacy, commercial viability, and practical useability are currently unknown.

How have you found using the Overseer model?

No problems with using the model. The issue is in transferring data back and forth between Overseer and Farmax, which is very time consuming.

Can these scenarios support non-Māori whanau who don't have a perpetual ownership structure? And how long of a timeframe should we be modelling ROC/ROI for this type of land use change? Can the current financial institutes cope with changing with this as well?

There is no problem in using these scenarios for non-Māori farms. The timeframe is not an issue, as the cashflow is discounted back to a present value-so the timeframe can be readily adjusted depending on the timeframe of the landowner.

Financial institutions will have to come up to speed with the changes that are occurring/will occur.

Did you model the savings or reduction in a GHG tax or increase in ETS income?

We usually model any reduction in GHG emissions as to the impact on the GHG tax. Only ETS forestry sequestration can provide an income - a reduction in GHG emissions from changing the farm system, for e.g., will not have an "income" component – but will reduce the GHG tax.

Are the GHG outputs from Overseer enough to extrapolate conclusions? Wouldn't it be necessary to do a more in-depth Life Cycle Analysis?

The GHG output from either Overseer or Farmax is quite suitable for extrapolating any conclusions. An LCA is unnecessary as we are concentrating on the farm's biological emissions, which is where any reductions/offsetting/tax is aimed.

Creating a new wetland: How soon would it be before we could use this as an offset, please? Is it the same time frame of exotic tree planting?

There are two components to this:

- (i) If the wetland was of sufficient size to result in a reduction of stock numbers, then the resulting reduction in GHG emissions would be immediately claimable.
- (ii) If trees were planted as a component of the wetland, then it depends on (a) whether it is ETS – compatible, or (b) the He Waka Eke Noa sequestration regime is accepted, which would affect the amount of carbon sequestration claimable. Essentially it could be claimed as an offset immediately, recognising that in the first few years the amount of carbon sequestered is relatively low, depending on the species planted.

Is water use and demand included in the scenario modelling, especially in thinking about horticulture inclusion in systems?

Yes – this is a key input taken into account when any horticultural regime is considered.

I live in Tararua where thousands of hectares have gone into forestry, with ~40,000 sheep now gone from the region. Schools have closed because many families are leaving the region. Marginal land is no longer a criteria to plant trees. When, if ever, will the breaks be put on forestry?

This is a political issue, which is outside the scope of the project.

Can the models develop be used internationally? India, Sub-Saharan Africa?

The models used are based on New Zealand science. While the methodology is readily transferable, the models themselves would need to be adapted to the country of interest – which would probably involve significant work.

Is the reduction in cow numbers having an impact on pasture management and pasture quality?

This is a significant issue. Managing pasture quality under a lower stocking rate regime requires a much higher level of management – if this is not forthcoming, pasture quality, and production can very easily spiral down.

I am a part of a Plantain group in Tararua. We are having some very good results. Have you experience with this?

We are aware of the work being done with Plantain, for reducing both N leaching and N₂O emissions.