


## Mitigation and the forestry sector

“With the manuka honey industry taking off and the Paris Agreement causing carbon prices to increase, earning an income from native trees may become lucrative,”

*Panapa Ehau, Managing Director, Hikurangi Enterprises, NZ Herald, July 2017*



Since 2013, Motu has worked on the multi-disciplinary programme “Shaping New Zealand’s Low-Emission Future”. This involves significant research, stakeholder dialogue, and international exchange to explore New Zealand’s potential pathways, policy options and practical actions for transitioning to a successful low-emission economy.

This booklet highlights some of the work that has emerged from the programme. More information is available from <http://motu.nz> and from our blog, New Zealand’s Low-Emission Future, at <http://low-emission-future.blogspot.co.nz/>

Carver, Thomas, Patrick Dawson and Suzi Kerr. 2017. *[“Including Forestry in an Emissions Trading System: Lessons from New Zealand.”](#)* Motu Working Paper 17-01. Wellington: Motu Economic and Public Policy Research.

This paper describes the policy changes to the New Zealand Emissions Trading Scheme (NZ ETS) since 2008 that directly affect forestry; assesses the effectiveness of the scheme; explores who is benefiting from it; and outlines issues facing forestry in the NZ ETS moving forward.

The NZ ETS is designed to incentivise the planting of additional forests, i.e. planting that would not have occurred in the absence of the scheme. Plantation foresters responded to the financial incentives from the NZ ETS in a rational way. Unfortunately, due to international changes and the local regulatory responses to them, those incentives were weak at best and sometimes perverse.

There are definitely reasons for optimism when it comes to forestry and emissions trading. If the price remains high, and foresters can trust the scheme not to change, owners of marginal land and forest are likely to avoid deforestation, plant new trees, extend harvest rotations and replant after harvest. We do, however, need to be careful about changes to the system that can either give windfall gains or create extra complexity with little gain.





*Few new trees planted  
Low price limited effect  
Can reform fix this?*

**Carver, Thomas and Suzi Kerr. 2017. “*Facilitating Carbon Offsets from Native Forests.*” Motu Working Paper 17-01. Wellington: Motu Economic and Public Policy Research.**

This report explores some of the barriers and potential to get more native forestry offsets created in New Zealand. Emission reductions from native forestry sequestration are already recognised in the NZ ETS and it is ‘shovel ready’ to generate native forest offsets. Native forestry also has a wide range of associated environmental, cultural, social and economic co-benefits.

Eight percent of the forest land registered in the NZ ETS is native. Since 2008, however, only 500 hectares (Ha) of new native forest has been established and registered. If we established another 10,000 Ha of land in native forest, this would sequester 65,000 tonnes of greenhouse gases annually, which would be eligible to earn 65,000 NZUs per year under the NZ ETS.

Firms with obligations in the NZ ETS, or with high emissions that they cannot rapidly reduce, all need to plan ahead in case the unit price goes substantially higher than its current price (\$17 per NZU at the time of writing). Businesses can help influence government policy and have the capital and capacity to play a facilitating role in the market.



*Natives get rewards  
Can we make it easier?  
Birds and climate win.*



Timar, Levente. 2016. “[\*Does Money Grow on Trees? Mitigation under Climate Policy in a Heterogeneous Sheep-Beef Sector.\*](#)” Motu Working Paper 16-09. Wellington: Motu Economic and Public Policy Research.

Around a third of the country’s land area is devoted to sheep-beef farming, and much of this pastoral land could be suitable for reforestation. This paper uses simulations from the Land Use in Rural New Zealand (LURNZ) model to consider mitigation for different classes of sheep-beef farms under climate policy. Farmers in the model can respond to carbon prices by abandoning or afforesting marginal land.

In assessing carbon credits against liabilities, the paper considers only the income a farmer would be able to get with certainty without taking a carbon price risk. Farmers in intensive farm classes tend to bear the costs of emissions because their opportunity cost of exiting pastoral agriculture is high. The dominant land-use response in more extensive systems is land abandonment or afforestation, depending on location.

Less profitable farm classes generally face higher average liabilities in relation to profits, both before and after the land-use response. Results indicate that farmers in North Island hill country may benefit most from afforestation opportunities. In this farm class, income from rewards could offset over half of farmers’ emission liabilities.

*Ruminating on  
methane. Land use will change and  
someone’s gotta pay.*




Kerr, Suzi, et al 2012. *“Spatial and Temporal Responses to an Emissions Trading System Covering Agriculture and Forestry: Simulation Results from New Zealand.”* *Forests* 3:4, pp. 1133-56.


This paper uses the integrated LURNZ model to analyse the effect of various NZ ETS scenarios on land use, emissions, and output across time and location. We compare the impact of afforestation to the impact of other land-use change on net greenhouse gas emissions, and evaluate the importance of the forestry component of the NZ ETS relative to the agricultural component. We also examine the effect of land-use change on the time profile of net emissions from the forestry sector.

Our projections for the mid-2020s suggest that under a comprehensive NZ ETS, sequestration associated with new planting could be significant; it may approach 20 percent of national inventory agricultural emissions in 2008. Most of this is driven by the reward for forestry rather than a liability for agricultural emissions.

The paper also gives projections of future agricultural output under various policy scenarios.

A photograph showing a cow grazing in a field. The cow is in the foreground, and a large evergreen tree is on the right side. The background is a blurred green field.

*Prices change land use  
Will a broad ETS change  
our forest planting?*



*Motu means “island.”  
Our research rises above  
uninformed debate.*

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More information is available from <http://motu.nz> and from our blog, New Zealand’s Low-Emission Future, at <http://low-emission-future.blogspot.co.nz/>.