



Funded by the Fertiliser Association of New Zealand

Forestry on Farms Report – Summary

Objectives

This study was undertaken by a consortium of AgFirst, Groundtruth and Market Economics. The four objectives were:

- Analysis of the impact at the on-farm level of planting areas into forest, with respect to overall business profitability, and changes in production. This includes the value of carbon and the proposed farm-level levy
- Assessment of the wider macro-economic impacts of such land use changes
- Analysis based on targeted sensible land use changes within the regions e.g., areas of steeper sheep and beef hill country land transitioning into production forestry and natives
- Assessment of the impact of blanket planting (i.e., whole farms) into forestry for carbon/timber

This was done by analysing the impact on statistically “average” farms for Northland and Hawke’s Bay, and involved planting either 10%, 30% or 100% of the farms in three forest types: Pinus radiata, Cypress (as an example of a special-purpose timber) or indigenous. The impacts of this were then assessed at the regional level.

Farm Level

At the farm level, as increasing areas of lesser-productive land were planted into forestry, the pastoral operation intensified on the more productive land. This resulted in an increase in EBITDA¹, meat and wool production, and greenhouse gas emissions on a per-grazed hectare basis, but a decrease in total farm output across all three.

In the absence of any carbon value, the addition of 10% of pinus radiata resulted in very similar total EBITDA returns relative to the 100% pastoral operation. A higher proportion of radiata, and all levels of planting of either cypress or natives resulted in a much lower total EBITDA.

The addition of a carbon value (\$85/T CO₂e) resulted in all exotic forest scenarios lifting total farm EBITDA well above the base level of profitability, with the most profitable option being 100% planting in radiata followed by 100% planting in cypress. All indigenous forest plantings resulted in a much lower EBITDA relative to the pastoral (base) operation.

Assuming the carbon credits were used solely to offset the proposed emissions levy, the analysis indicates that a 10% planting of pines, could do so for 30+ years.

¹ Earnings before interest, tax, depreciation and amortisation

Regional Level

This was analysed using Input/Output tables. The results showed:

- A positive impact in the initial year, for both value-add and employment, where the benefits of planting the forest offset the loss of the farming production.
- From then on, the impact was negative, both for the region in question and for the rest of New Zealand, through until the forest was harvested.
- In the year of harvest there was a significant increase in both value-add and employment as a result of the harvesting/processing. This resulted in an overall positive Net Present Value (NPV) for the pines scenarios, and the 10% Cypress scenario. All the indigenous scenarios had a negative NPV.
- From an employment perspective there is a necessity for planting and harvesting to be phased and sequenced in order to maintain a sufficiently skilled labour force for harvest. This was not undertaken in this analysis.
- The addition of a value for carbon provides no net gain in value-add. The impact of a value for carbon is essentially an internal wealth transfer, with no overall net benefit at a national level.

Key Points

When undertaken in a planned and integrated way at a farm-scale, establishment of forest on the farm can improve farm returns and resilience, while still maintaining significant livestock farming operations.

Farmers who have carried out forestry plantings on lower-productive land have experienced a positive impact on farm profitability due to an increase in per head livestock performance and a decrease in running costs for weed control, infrastructure maintenance and labour associated with managing reduced land area. As such, an integrated land use approach offers the opportunity for greater economic and environmental resilience. The advent of a value for carbon sequestration significantly adds to the profitability of the integrated business and could be used as a means of offsetting the impact of the proposed emissions levy, for some years.

At current policy settings blanket planting of pines is the most profitable activity at farm-scale compared to “woodlot forests” integrated into the farm. Additionally, blanket planting of pines for carbon-only is much more profitable than harvesting, meaning that farms are more likely to be blanket planted. This may well not be in the national interest.

In many respects therefore, the answer for profitability, climate change, water quality protection and biodiversity improvement, would appear to be “trees on farms” rather than “farms into trees”.

