

Forestry on Farms: Implications for Farm Sustainability and Regional Impact

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There is a report...

<https://www.fertiliser.org.nz/Site/research/projects/forestry-on-farms.aspx>



Objectives:

- **Understand the opportunity to farm better class farmland more productively while planting forestry on poorer class farmland**
- **Analysis of the economic impact at the on-farm level of planting areas into forest**
- **Assessment of the wider macro-economic impacts of such land use changes**
- **Assessment of the impact of blanket planting (i.e. whole farms) into forestry for carbon/timber**



Methodology:

- **2 S&B farms set up – Northland & Hawke’s Bay, based on B+LNZ Economic Service stats**
- **Initially 10% of the (lower productive area) farm planted into forestry**
- **30% of the farm planted into forestry**
- **100% of the farm planted into forestry**
- **Assessed impact on farm profitability & GHG emissions with/without carbon**
- **Asses wider impact on the region assuming all farms planted up**



Tree spp were:

- **Pines**
- **Cypress**
- **Natives**

Results: Changes in Farm Profitability

| Northland | EBITDA Total | % Change from Base | EBITDA/ha | % Change from Base | SU Eff/ha | Stock Numbers Adjustment |
|---------------------|---------------------|---------------------------|------------------|---------------------------|------------------|---------------------------------------|
| Base | \$76,564 | | \$223 | | 9.9 | |
| 10% Forestry | \$72,376 | -5% | \$234 | 5% | 10.4 | Sheep & Cattle reduced 5% |
| 30% Forestry | \$52,940 | -31% | \$221 | -1% | 11.1 | Sheep & Cattle reduced 22% |
| Steep | \$3,101 | | \$69 | | | |
| Rest of Farm | \$73,463 | | \$247 | | | |

| Hawkes Bay | EBITDA Total | % Change from Base | EBITDA/ha | % Change from Base | SU Eff/ha | Stock Numbers Adjustment |
|---------------------|---------------------|---------------------------|------------------|---------------------------|------------------|---------------------------------------|
| Base | \$342,666 | | \$525 | | 9.0 | |
| 10% Forestry | \$328,633 | -4% | \$559 | 7% | 9.5 | Sheep & Cattle reduced 5% |
| 30% Forestry | \$274,730 | -20% | \$601 | 15% | 10.3 | Sheep & Cattle reduced 20% |
| Steep | \$91,761 | | \$370 | | | |
| Rest of Farm | \$250,905 | | \$620 | | | |

Results: Changes in Farm Production

| Northland | Base | 10% Forest | % Change cf Base | 30% Forest | % Change cf Base |
|--------------------|---------------|-------------------|-----------------------------|-------------------|-----------------------------|
| kg sheep meat sold | 6,493 | 6,141 | -5.4% | 5,039 | -22.4% |
| kg wool sold | 2,176 | 2,064 | -5.1% | 1,693 | -22.2% |
| kg beef sold | 82,934 | 78,660 | -5.2% | 64,522 | -22.2% |
| | | | | | |
| Hawkes Bay | Base | 10% Forest | % Change cf Base | 30% Forest | % Change cf Base |
| kg sheep meat sold | 56,643 | 53,832 | -5.0% | 45,301 | -20.0% |
| kg wool sold | 18,616 | 17,736 | -4.7% | 15,073 | -19.0% |
| kg beef sold | 76,594 | 72,727 | -5.0% | 61,359 | -19.9% |

Results: Changes in GHG Emissions

| Northland | Total CO₂e/ha | % Change from Base | Total Biological T CO₂e/farm | % Change from Base |
|---------------------|---------------------------------|---------------------------|------------------------------------------------|---------------------------|
| Base | 3.71 | | 1,271 | |
| 10% Forestry | 3.91 | 5.4% | 1,208 | -4.9% |
| 30% Forestry | 4.17 | 12.4% | 1,002 | -21.2% |
| | | | | |
| Hawkes Bay | Total CO₂e/ha | % Change from Base | Total Biological T CO₂e/farm | % Change from Base |
| Base | 3.11 | | 2,030 | |
| 10% Forestry | 3.28 | 5.5% | 1,928 | -5.0% |
| 30% Forestry | 3.57 | 14.8% | 1,631 | -19.6% |

Results: Impact of Carbon

| Northland | Total EBITDA No Carbon | Net EBITDA after accounting for carbon | Hawkes Bay | Total EBITDA No Carbon | Net EBITDA after accounting for carbon |
|-------------------------------|-------------------------------|-----------------------------------------------|-------------------------------|-------------------------------|-----------------------------------------------|
| Base | \$76,832 | \$71,424 | Base | \$342,825 | \$334,194 |
| 10% Pines | \$74,328 | \$106,963 | 10% Pines | \$337,045 | \$401,079 |
| 30% Pines | \$64,668 | \$174,822 | 30% Pines | \$350,904 | \$512,185 |
| 100% Pines | \$64,985 | \$446,009 | 100% Pines | \$173,275 | \$898,664 |
| 10% SPS | \$66,780 | \$85,192 | 10% SPS | \$317,342 | \$354,184 |
| 30% SPS | \$38,324 | \$105,391 | 30% SPS | \$241,308 | \$370,109 |
| 100% SPS | -\$35,759 | \$201,777 | 100% SPS | -\$76,442 | \$375,777 |
| 10% Natives | \$45,326 | \$59,421 | 10% Natives | \$276,522 | \$305,114 |
| 30% Native | -\$29,869 | \$24,123 | 30% Native | \$117,346 | \$221,267 |
| 100% Natives | -\$275,295 | -\$81,298 | 100% Natives | -\$524,104 | -\$154,775 |
| Mixed | \$21,082 | \$98,153 | Mixed | \$219,207 | \$376,561 |
| Pines/Periodic Harvest | \$50,431 | \$110,748 | Pines/Periodic Harvest | \$276,813 | \$396,299 |

Results: Impact of Carbon#2

| Northland | Area in Pasture (ha) | Area in Forest (ha) | 2025 Carbon Levy (\$) | Forestry Credit | Net Levy | EBITDA/ha Post Levy |
|--------------------|----------------------|---------------------|-----------------------|-----------------|-----------------|---------------------|
| Base | 343 | 0 | \$5,408 | | -\$5,408 | \$208 |
| 10% Pines | 309 | 34 | \$5,135 | \$71,672 | \$66,537 | \$406 |
| 10% SPS | 309 | 34 | \$5,135 | \$37,281 | \$32,146 | \$305 |
| 10% Natives | 309 | 34 | \$5,135 | \$18,785 | \$13,650 | \$252 |
| | | | | | | |
| Hawkes Bay | Area in Pasture (ha) | Area in Forest (ha) | 2025 Carbon Levy (\$) | Forestry Credit | Net Levy | EBITDA/ha Post Levy |
| Base | 653 | 0 | \$8,631 | | -\$8,631 | \$512 |
| 10% Pines | 588 | 65 | \$8,172 | \$137,020 | \$128,848 | \$701 |
| 10% SPS | 588 | 65 | \$8,172 | \$71,273 | \$63,101 | \$600 |
| 10% Natives | 588 | 65 | \$8,172 | \$35,913 | \$27,741 | \$546 |

Results: Regional Impact (10% Pines)

| Northland | | | | | | | | | | | | | | |
|--------------------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------|--------|
| Year | 0 | 5 | 10 | 15 | 20 | 25 | 28 | 30 | 35 | 40 | 45 | 50 | 55 | 56 |
| GDP \$m | -58.4 | -13.3 | -13.3 | -13.3 | -13.3 | -13.3 | 2,007 | -13.3 | -13.3 | -13.3 | -13.3 | -13.3 | -13.3 | 2,007 |
| MECs | 100 | -101 | -101 | -101 | -101 | -101 | 17,568 | -101 | -101 | -101 | -101 | -101 | -101 | 17,568 |
| Hawke's Bay | | | | | | | | | | | | | | |
| Year | 0 | 5 | 10 | 15 | 20 | 25 | 28 | 30 | 35 | 40 | 45 | 50 | 55 | 56 |
| GDP \$m | -93.5 | -20.2 | -20.2 | -20.2 | -20.2 | -20.2 | 4,298 | -20.2 | -20.2 | -20.2 | -20.2 | -20.2 | -20.2 | 4,298 |
| MECs | 194 | -78 | -78 | -78 | -78 | -78 | 48,575 | -78 | -78 | -78 | -78 | -78 | -78 | 48,575 |

Significant impact on the regional economy, but its very good from an investment perspective

Discussion

- **Planting lesser productive land into forestry resulted in intensification of the better land – production, profitability and GHG emissions per ha increased, while total farm decreased**
- **Planting into forestry held the total farm EBITDA with 10% pines, but reduced for all other forestry scenarios**
- **Advent of a price for carbon meant that the most profitable option was 100% pines, followed by 100% cypress**
- **From a regional economy perspective the impact was negative, until harvest – at which stage there was a significant spike in GDP/employment**
- **From an investment perspective carbon farming is very positive**
- **Want trees on farms, not farms into trees**

Questions

