

Is the ETS worth the carbon it is written on for small-scale forest owners?

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Abstract

The major suppliers of the increase in post-1989 plantation forests are small-scale forest owners. Despite this, small-scale forest owners face disproportionately high costs from the way that the emissions trading scheme has been implemented. These high costs are systemic and include cost of participation, preparation of returns, and poor systems and processes used by government agencies that impose the cost of errors and inefficiency on participants. The result is participation in the scheme adds more risk to an already high-risk investment. We conclude that the way that the scheme is implemented disincentivises investment in small-scale forestry.

Introduction

Small-scale forestry makes a significant contribution to New Zealand's post-1989 sequestration of carbon in plantation forests. Small-scale forest owners, those owning less than 1,000 ha, are the major contributor of new land for planting in plantation forest after 1989. In 2015, 72% of the post-1989 increase in forest land was provided by small-scale forest owners. Forests of less than 40 ha added 205,000 ha and forests of 40 to 1,000 ha supplied 142,000 ha. Forest owners in this latter group can be considered investors in forestry expecting a commercial return on their investment. Investment in new plantings has an expected investment horizon of 25 to 30 years, making it highly dependent on investor expectations at the time of planting. Expectations of returns on forestry were highly favourable in the early 1990s, but today they are no longer as favourable.

Initial analysis of the potential impact of the emissions trading scheme (ETS) focused on the benefits of early income from the sale of carbon credits on the profitability of forestry, while recognising that the net benefit is dependent on the magnitude of the compliance costs imposed by the scheme (see for example Evison, 2008). This paper is prepared at the time of New Zealand Emissions Trading Scheme Review 2015/16 and has benefited from comments in the summary of submissions to the Review. Most submitters on the forestry sector (13 of 16 responses) expressed a negative view to the question 'Does the NZ ETS provide effective incentives for smaller foresters to participate in the scheme?'

This paper shows that the ETS is costly for small-scale forest owners. The analysis identifies elements of compliance costs imposed by the ETS and estimates these costs. We argue that the way the ETS has been implemented imposes disproportionately high costs on small-scale forest owners.

Operation of the ETS

The ETS was instituted in 2008. Owners of forest planted after 1989 are eligible for allocation of New Zealand Units (NZUs) related to the growth in forest. Forestry, unlike all other sectors covered by the ETS, must return NZUs equal to the amount of carbon that is removed from forests. For forest owners, participation in the ETS is a zero sum accounting exercise in that every unit allocated under the scheme must be returned at a future point in time once trees are eventually harvested or carbon stock is reduced by any other event.

Despite this apparent simplicity, there are asymmetries in the application of regulations, for example, forest owners must account for a full rotation of the post-harvest above and below ground residue following harvest (albeit over a 10-year period of decomposition). However they only have the benefit of claiming carbon sequestered since 2008. This is particularly disadvantageous to participants with trees planted immediately after 1989 which were mid-rotation by 2008. They must account for half a rotation of residue that they have had no benefit from.

Magnitude of compliance costs

First, participation in the New Zealand Emissions Trading Register incurs costs to open and maintain a holding account. After this there are compliance costs in participating in the Register. From the start, the government has been vague and non-committal on compliance costs. When the scheme was launched standard look-up tables were produced for different regions and for key species for the calculation of carbon sequestered above and below ground level at different ages.

The field measurement approach (FMA) was then introduced. Under this approach:

- The forest owner submits GIS descriptions of the areas to be covered
- The Ministry for Primary Industries (MPI) then generates a table of sampling locations

- The forest owner takes tree measurements at these locations and submits them to MPI
- MPI generate and issue tables of the estimated carbon sequestrated above and below ground level at different ages for that forest.

Forest owners incur ongoing costs from preparing voluntary returns: record keeping, establishment and re-measurement of sample plots required by the FMA for forests over 100 ha, measurement of changes in the event of harvest or another event affecting carbon stock, calculation and preparation of annual return and filing returns. In addition, there are costs for any additions or removals of land from the ETS or transfer of participation in the event of sale, and the negative impact participation may have on property value from outstanding carbon liabilities. The table below provides estimates of the annual cost of a small (100 ha) forest owner contracting out preparing voluntary returns at \$3,150 a year.

Table 1: Estimate of annual cost to a small forest owner of contracting out the preparation and filing of voluntary returns (calculated at industry consulting rates)

Item	Estimated cost
Record keeping and correspondence with MPI	\$275
FMA plotting and data entry	\$2,000 (p.a. equivalent)
Calculation, preparation and peer review of annual return	\$500
Filing return	\$375
Total	\$3,150

These are not the only costs faced by a small-scale forest owner preparing the annual return themselves. For these owners, and indeed any participant, there is the additional cost of penalties from errors. We highlight this cost because the ETS places the entire burden for the accuracy of the return with the filer of the return. The process to submit the annual voluntary return involves using look-up tables or FMA data tables.

The calculation itself is best suited to being undertaken on a spreadsheet using the areas, species and age classes. To calculate the increment for each age class involves selecting the correct start and end years. This process introduces the two sources of error which an occasional user may not pick up and results in claiming the incorrect annual increment. Online filing introduces another possible source of error when data is entered. Should a participant be audited by MPI, the direct cost to the participant to deal with the Ministry is in the range of \$1,000 to 5,000, depending on the complexity of the audit (such as where field verification of FMA data is required).

The key issue to note here is that all data used in the calculation is derived from MPI/ETS data sources. These

errors could be eliminated by a calculator being provided on the MPI website to calculate annual increments for each registered area. Importantly MPI do not check the calculated increment before approving the allocation. MPI do provide calculators for participants who file deforestation returns, used to verify the user calculated amount for the number of NZUs to surrender/emissions liability. MPI has all the data to verify the reasonableness of the return submitted. It has chosen not to make the investment in suitable tools to assist forest owners instead choosing to pass the cost of error to the forest owner. This increases the compliance cost of the ETS by making the ETS return process more hazardous for forest owners, particularly if penalties are applied where mistakes are made.

The current process already imposes high compliance costs and risk on small-scale forest owners. Unlike large organisations, small-scale forest owners have none of the skills and resources to properly take on the high cost of the ETS. If the area, species and age class information provided by the participant is correct, and no harvesting or area/carbon stock loss has occurred, then the calculation of an annual increase in carbon stock is both basic and transparent. An error in calculation is unlikely to be intentional and is easily remedied if suitable checks are in place. Despite this, the small-scale forest owner will be penalised with audit costs and fines for errors. We note that this issue is referred to in some submissions to the 2015/16 Emissions Trading Scheme Review.

Costs imposed by 22H(8) of Climate Change (Forestry Sector) Regulations 2008

Regulation 22H(8) applies where a registered forest falls below 100 ha and where the addition of areas takes it back over 100 ha. On every occurrence of passing this threshold the participant must apply for new tables and must establish and survey new sample plots. Simply because of the application of an arbitrary threshold a small-scale forest owner incurs additional costs. The point to emphasise here is that small-scale forest owners are not experts in the Climate Change (Forestry Sector) Regulations 2008 and to remain compliant they are forced to incur the costs of engaging professional assistance.

Costs imposed by government agency errors

Special mention needs to be made of the costs imposed by MPI errors. These costs arise because the government makes the rules, applies them by following prescribed processes and procedures, and is the judge and arbiter of whether these have been done correctly. An illustration of this situation is the assessment of 1990 vegetation cover. There are deficiencies in the data MPI has available on vegetation cover in 1990. The default procedure is that if the available imagery indicates the presence of 'woody vegetation' then it is assumed to be woody tree species. In fact, mature species such as broom and gorse can appear as woody vegetation.

The government as rule maker, applier, judge and arbiter results in a situation where the forest owner must prove that no tree species existed in 1990. There are two issues with this approach:

- First, it imposes a high burden of proof on landowners to prove conditions before the ETS legislation was enacted. Had 1990 landowners known that this would be a future requirement to document their 1990 vegetation cover they may have taken steps to obtain and retain this information.
- Second, acknowledgement by officials of the deficiencies in their data should be addressed by the government proving that indications of woody vegetation are actually woody tree species, placing the burden of proof on the government. The assumption that indications of woody vegetation equates with the actual presence of woody vegetation places the cost of retrospective legislation on the forest owner.

The costs of government agency errors are disproportionately high for small-scale forest owners, because they have limited resources to challenge the decision of these agencies and are more likely forced to simply swallow the cost.

Impact on small-scale forest owners and cost of inconsistent application of process

The Register opened in 2011 and participation peaked in June 2012, with 2,445 participants owning post-1989 forest land, and then declined to 2,062 by June 2014. While no data is provided on the size of the participants, many must have owned forests of less than 40 ha since the number of participants exceeds the estimated number of forest owners of more than 40 ha – 2,567 participants compared to 1,800 owners. By deduction, there are a large number of small-scale forest owners involved and their benefit-to-cost ratio is worse than that faced by other participants in the ETS.

Twenty-nine percent of participants in 2013 with the same percentage of registered land chose to de-register in 2014, presumably to take advantage of the ability to hand back cheaper units. Undoubtedly the number of de-registrations would have been greater had the government not stepped in to remove this option. This observation is strengthened by the fact that larger forest owners de-registered (this can be inferred from the available information as the average size of forestry participants fell).

The unsurprising, but nonetheless, important conclusion that can be drawn from this is that forest owners participate in the ETS to improve the profitability of investing in forestry. It is important to be reminded of this because forest owners show a high propensity to exit the ETS where profitability is compromised. If the scheme is fundamentally sound and profitable then one could reasonably expect that re-registration would

be occurring in numbers, particularly in response to the remarkable improvement in the NZU price over the last 12 months. However, we understand from industry sources that this is not occurring.

Any forest owner who de-registered faces costs to re-register. For users of the FMA, this includes the cost of obtaining new tables. With zero sum accounting of carbon units, for a small-scale forest owner it is questionable whether anything other than more cost is added by recalculating FMA tables compared to reusing the initial table.

Some have found, on attempting to re-register previously registered forests, areas have been rejected. This points to inconsistency in the application of ETS processes over time. The cost to rectify deficiencies in processes applied by government agencies is borne by the forest owner.

Forest owners are forced to be NZU price speculators

The ETS regulations require participants to account for all harvest removals, either immediately or as residues decompose. In that regard the legislation is fatally flawed as it fails to recognise the value of embedded carbon in wood products. This could be rectified, for example, by paying forest owners a social dividend for producing and putting to market a product which provides long-term storage of carbon. A change in the regulations to account for that properly would have a significant impact on profitability for participants and not require any market intervention or price control to achieve a beneficial result. Without this, forest owners participating in the ETS are forced to be NZU price speculators with high costs from risk, participation in the Register, transactions and compliance. They are speculating that the price of units sold will be higher than the price to re-purchase units in the future.

Discussion

Searches of the MPI website find no reference material that clearly sets out the high compliance costs the ETS imposes on small-scale forest owners, nor explains the magnitude of these costs which shortcomings in MPI's systems and processes impose on participants. For a small-scale forest owner, these costs are so significant that the Ministry has a responsibility to explain them, and the hazards of making a mistake at certain points in the process, especially where MPI has chosen not to invest in removing some high cost hazards and imposes penalties on participants for errors. Also, the mitigations the participant need to take should be fully explained instead of through the terms and conditions of participating, passing the responsibility to the participant. Adding to the costs of participating in the ETS are those from inconsistent processes and from a low ability to challenge errors in the process, because as already noted, the government agencies involved are rule maker, applier, judge and

arbiter. Those agencies have the resources required to enforce processes on participants who, in many cases, are unfamiliar with and lack experience in dealing with these agencies.

For the benefit of improved cash flow the costs are: price risk, participation in the Register, transactions and compliance. Forestry investment is high risk for small-scale forest owners, with a wait of some 28 years for a return. Participation in the ETS for the sale of NZUs adds more risk to an already high-risk investment. The design and implementation of the ETS by the government makes participation by small-scale forest owners unattractive in the long term. The inescapable conclusion to draw from this is that high costs (more than \$3,150 p.a.) disincentivise investment in small-scale forestry.

The ETS has the potential to improve returns on investment in small-scale forestry by providing a positive second income stream in advance of harvest and lower cash flow risks associated with long-term investments. Without a fundamental redesign of the ETS, it will do the opposite and drive investment out of small-scale forestry, the major supply of new post-1989 plantation forests. We have noted that an ETS Review is currently underway. We would add that because of no clear support from the government for small-scale forestry there is uncertainty as to whether new regulations introduced following the Review will complicate or improve the scheme for this group. This uncertainty compounds the current unfavourable expectations of returns on small-scale forestry.

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