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SHIFTING TRENDS IN LAND USE CHANGE – ECONOMIC, SOCIAL AND POLITICAL

This article looks at the changes that have occurred in rules covering forests in the Emissions Trading Scheme (ETS). It also summarises events that have occurred to increase land prices and comments on what is happening on the ground in a farming/land use context.

Increased interest in planting forests

The ETS has been in effect for over 12 years and in this time the price of carbon has gone from $18 down to $2 and now up to $85 per unit. For the first eight years it really concerned mainly pre-1990 exotic forest landowners who had to pay deforestation charges if forests were removed and converted to a non-forest use.

This was particularly so in the Central North Island and Canterbury, as over 250,000 ha of pre-1990 exotic forest was removed and converted primarily to dairy farming or activities associated with that industry. A few hill country dryland farmers and forest companies started to plant and register forest into the scheme, but only in small numbers.

Post-1989, registered participants were very cautious about selling credits issued as there was a requirement to repay these if the forest was harvested or destroyed by some natural event. This created a contingent liability with a value that depended on the prevailing market price at the time. In the past two years there has been a large increase in interest in planting forests as the price of carbon has dramatically increased.

Farm planting

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What's changed in the ETS?

There have been some important changes to the rules and way in which forests (or, more importantly, land) eligible to earn carbon credits will be administered. These rules are not in effect yet but come into force on 1 January 2023. The following is a summary of the main changes.

Averaging carbon accounting

Averaging allows you to claim the carbon accumulated for a period of time on the *first rotation*.

Figure 1 shows the period in which you can claim carbon and what happens on subsequent rotations. You can only claim carbon on the green portion of the line.

Each forest type in the ETS has its own average age:

- Radiata pine: age 16
- Douglas-fir: age 26
- Exotic softwoods: age 22
- Exotic hardwoods: age 12
- Indigenous: age 23.

For example, a radiata pine forest is usually harvested at 28 years. The average amount of carbon stored by a radiata pine forest over multiple rotations when it is harvested at 28 is equivalent to the amount of carbon it stores at age 16. If you registered a first rotation radiata pine forest in the Waikato region into the ETS when it is planted it would earn carbon for 16 years. Using the default carbon tables the forest would earn a total of 354 units.

The key point to note here is that credits can only be claimed from the start of the *first rotation*. This has important consequences for older trees. If you have an eligible radiata stand, under averaging carbon can only be claimed for the first 16 years. If you have a stand that was planted in 1993, never registered, has been harvested and is about to be replanted, under averaging it is not eligible to receive any credits.

In effect, averaging can supply credits for a first rotation forest planted on new non-forest land. Note carbon can be claimed every year up until the average age is reached. Once the average age is reached, there are no more reporting or compliance obligations apart from ensuring the land stays in forest cover if destroyed or harvested.

At harvest no credits have to be repaid and the timber crop revenue remains with the owner, but they are obligated to replant the land into any forest type within four years of harvest. In the future there is no carbon revenue (only timber) unless it is converted to a permanent forest category.

Permanent forest

Permanent forest operates under the Forest Stock system, which allows you to claim carbon annually up until age 50 years. In this time the forest cannot be clear-felled, but log removals can be undertaken so long as 30% canopy cover is maintained and production thinning and continuous canopy cover forest management systems are used. These systems are not common in New Zealand, but are more prevalent in Europe and in some North American areas.

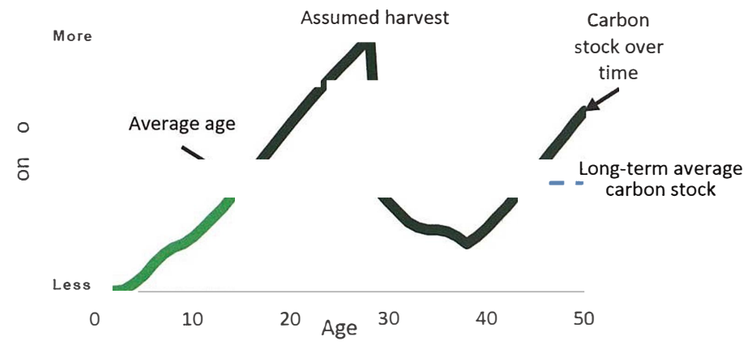

Figure 1: Averaging credit claim timing.Source: www.mpi.govt.nz/forestry/forestry-in-the-emissions-trading-scheme/averaging-accounting/

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At age 50 years there are three options:

1. Continue as permanent forest for 25-year periods.
2. Repay all the carbon claimed to date and, subject to Resource Management Act (RMA) 1991 rules, change land use.
3. Revert to averaging.

Under this you must repay the carbon back to the averaging age of the species. For example, if radiata you would keep the first 16 years of carbon claimed and repay the last 34 years. You can then clear-fell and it then becomes a normal averaging forest.

Forests can convert from averaging to permanent at any time, but note though that the 50-year period starts from when you become a permanent forest and not from the planting date. It is interesting to note that at the present time no-one can register a forest as permanent in the ETS, as the Permanent Forest Sink Initiative (PFSI) has closed and will be absorbed into the new Permanent Forest category in 2023.

Adverse event cover

Under the original ETS any forest lost via a natural event (fire, wind etc) resulted in the participant being obligated to repay all the credits that had been issued to them, either upon declaration of the event or within a few years afterwards. This is difficult and expensive to insure against. Large forest owners with a scattered and diverse estate could self-mange this risk, as many do for fire now. For small owners this was very difficult. As a result, most owners were reluctant to sell credits and expose themselves to this risk.

As of 1 January 2023, the Crown will provide adverse event cover. In summary, if a forest is destroyed through natural events the carbon liability will not have to be repaid. It will, in effect, be parked. There is an obligation to replant the forest within four years and once the forest achieves the carbon stock it was at the time of loss it can receive credits again. Note that the liability is not extinguished and follows the replanted forest.

For averaging forests, if the destruction event is after the averaging age there is no issue because once the averaging age is achieved the forest can be harvested anyway – it must just be replanted. For permanent forests, the forest must be re-established and once it achieves the carbon stock it can start to earn new credits again. The exact details of how this can be applied for are being developed as regulations now and will be revealed later in 2022.

Why has the carbon price risen so much?

This is a combination of new government policy, which has been in discussion and formulation over several administrations of all colours, and the passing of the Climate Change Response (Zero Carbon) Amendment Act 2019. This established the Climate Change Commission (CCC) and its subsequent report of recommendations about how to tackle climate change issues.

Alongside this has been the 2015 Paris Agreement with governments and large companies taking on board the concepts and goals of reducing emissions. We see this reflected almost daily in our lives and the news today. All industries now face increasing scrutiny and questions about what we are doing to both reduce emissions and general environmental stewardship, which has resulted in international carbon prices rising, including those in New Zealand.

The world has talked about reducing emissions in the past and now it appears action is being taken.

In New Zealand's case, the government of the day has picked up the recommendations of the CCC and started to implement these. **Figure 2** provides a summary of the CCC's recommendations around forestry.

In total, the CCC recommended a further 380,000 ha of exotic forest by 2035 alongside 300,000 ha of native forest by this date as well. Post-2035 there is not deemed to be a requirement for more large areas of exotic forest for climate change purposes, but further natives will be required into the future after this date. This, of course, assumes all other reduction actions are taken and achieved to some degree.

New Zealand's ETS has now become a true Cap and Trade scheme with a cap on emissions set and reducing as time passes. With a reducing supply of offsets through government auctions forecast, and price ceilings lifting, we have seen secondary market prices lift as well. The ETS is designed to incentivise emission reductions through price signals and as the price rises the signal is stronger.

Land use effects

For this discussion I present what I see as happening in rural New Zealand with all the changes above occurring. In my view, it's not all about trees.

Having been in the forest industry for 40 years, with 33 years of that working with farmers, iwi and small forest investors (and while working with large international investment funds), it has been an interesting evolution and journey. I must also admit to being a Boomer – the last year (1963). My children inform me it is very important that I

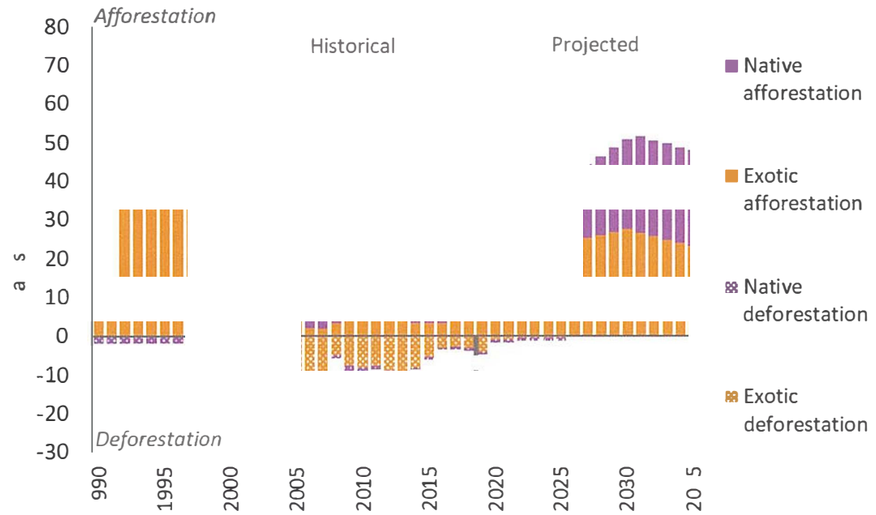

Figure 2: Climate Change Commission projection on new forest required

An important point, often misreported, is that overseas investors cannot register for permanent forests. They are confined to averaging for new forests, so if planting radiata within 16 years they are solely timber forests.

understand I come from another time – I inform them we are grateful social media didn't exist in our time.

So what's happening? With several factors in play – the rise in carbon price, the perceived risk of political change reducing, international political and business acceptance of the requirement for reductions in emissions or offsets – it is unsurprising that we are seeing a large upswing in the demand for land to plant trees.

International buyers

These buyers receive a lot of the headlines as they are visible and are buying some very large properties to plant. What motivates them to be here? Carbon – naturally the returns from the first 16 years are very good. *But* an important point, often misreported, is that overseas investors cannot register for permanent forests. They are confined to averaging for new forests, so if planting radiata within 16 years they are solely timber forests.

Alongside this are predictions (World Bank, Gresham House) that within 30 years the demand for timber products will increase from between 200-400% compared to now. Time will tell, but it seems from my discussions with large international investors that they do give credence to these predictions.

Nearly all the new overseas buyers are new to New Zealand and the traditional large overseas forestry timber companies here are, by and large, not participating in the new planting. Some of these entities are very interesting companies – some are many hundreds of years old and have been forest owners for centuries. They are in for the long term and having survived numerous wars in Europe and political upheaval so have a different perspective on the world. This group is a growing presence in our rural land markets and have large amounts of capital that no-one in New Zealand can match.

w Zealand permanent carbon farmers

re are a small number of companies in this space these two are the main entities:

New Zealand **Carbon Farming**

NZ Carbon Farming Ltd

NZ Carbon Farming state they are managing over 46,000 ha as a permanent forest and have bought larger areas of land in lower price land areas of New Zealand. They recently tried to sell a portion of their estate to a UK-based fund, but this was declined by the Overseas Investment Office (OIO), as they will not let overseas entities participate in permanent forestry

DRYLAND CARBON

Dryland Carbon

Dryland Carbon is a partnership of four Kiwi companies – Air New Zealand, Contact Energy, Genesis Energy and Z Energy. They seek carbon credits from New Zealand forestry operations to meet their compliance surrender obligations under the ETS. How much is intended to be permeant versus averaging for Dryland is unknown.

This form of exotic forestry appears to be the a that is creating the most angst, alongside large erseas buyers. Interestingly, both companies ear not to be competitive, with buyers focused on g averaging accounting when trying to buy land. lysis we have undertaken shows that on land h reasonable timber returns pure carbon farming not compete as land prices increase. It will win on d that has low profitability for timber only. Permanent exotic radiata forest on land that is ieved to be profitable for animals or timber is not wed favourably by either the agricultural or the ditional forest industry or many environmental ups. There may be disagreement between the tors over animals or timber, but there appears to

Farmers

This is the space where change is rapidly occurring and is not reported as no land sales take place.

At the present time, we are seeing unprecedented levels of interest from traditional farming units to look at trees as another option for land use. From my observations this is driven by three factors:

1. Succession – the elephant in the room

As farmers are ageing, they are looking to pass farms onto family as in the past. Many these days find that their children are in good jobs, and earn as much (if not a lot more) than they can on the farm. Their partners do not want to live in remoter provincial areas. They get four weeks' leave plus statutory holidays off. They want the children to go to school in urban areas and then be with them, and they want a new house.

If they do have a family member wanting to take on the farm they then have to navigate other family members wanting 'their share' – you must deal not just with the family but also the partners and their lawyers. Then there's the small issue of the parents who have worked so hard for many years and deserve a break, although they will invariably sacrifice this to see the next generation onto the land.

2. Farm labour

As with any industry today labour is a real and growing problem. This is one area that is coming for all rural industries. If you read some of the demographic work by those such as Dr Natalie Jackson some areas in rural New Zealand are going to experience a 20-40% decline in the working age population over the next 10-20 years. Population may rise but it's full of Boomers needing help. Immigration will not solve this as every developed country has this problem. In my view, this is the real issue all industries need to be seriously thinking about and planning for.

3. Profitability – another elephant in the room

As I listen privately to top bankers, accountants, farm advisors, farmers and (most importantly) farmers' wives, this is a serious problem. We need to find ways to improve profits. Talk of productive land is meaningless unless it is profitable – they both start with P but have very different outcomes. Succession is impossible unless there is profit. For some the high land prices now are their escape ticket out and mean families can have Christmas together every year. The reality is three to four years ago there were numerous farms on the market that couldn't sell.

These three issues are leading many farmers to plant trees to take advantage of carbon and timber. For some it is natives and for others it is pine. Some are planting 5%

Higher carbon prices have produced a large increase in tree planting and there is much debate around the mix between overseas, permanent and integrated farm plantings.

For farmers who dipped their toes in this pond up to 10 years ago and have started the journey the result has been transformational. They have solved their succession issues due to high profits. They have also retired the harder, unprofitable land, and there is no marginal land anyway as you either make a dollar or lose a dollar. It's also solved most of their water issues at the same time. Their farms are immaculate and they produce great animals. As one wife from a third generation farming family said to me, 'We always had dreams of what we could do, but they were just dreams – those dreams have become reality now.'

Summary

Higher carbon prices have produced a large increase in tree planting and there is much debate around the mix between overseas, permanent and integrated farm plantings. What we are seeing is many farmers starting to explore and plant trees on their farms. This is driven not only by returns and the ability to use land that was not profitable in traditional land uses (but now has a far higher profitable land use option), but also succession options to allow land to stay within families and help enable fair and equitable solutions within them.

Labour availability is a real issue looming large in all rural areas – not just farming. At the same time high land prices have provided an opportunity for some landowners to leave the industry as it is the best solution for their families.

Finally – what's coming? As a Boomer I've learnt a few things:

1. Young people these days are a lot brighter, engaged and smarter than I was at their age.
2. We shouldn't feel insulted that it's changing compared to how we did it – we didn't do it wrong.
3. None of my three boys are remotely interested in following me into my business – it's not a crime to not pass the land on.

Watch out for tokenisation, blockchain and digitalisation of carbon, biodiversity and other things – it's happening now and will potentially revolutionise how we make our incomes in the future.

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