Afforestation report shows whole farms are being converted into carbon forests at alarming rates

Summary of independent validation report and B+LNZ's analysis

October 2022

Whole farm sales

According to the latest report from Orme & Associates commissioned by Beef + Lamb New Zealand (B+LNZ), more than 175,000 ha whole-farm purchases of sheep and beef farmland has been sold with the intent to convert into forestry since 2017.

This is based on analysis of land sale titles and identification of known forestry interests as the purchaser. More farms could have been sold to forestry interests that were not easily identifiable.

The scale and pace of these whole farm purchases is rapidly increasing.

In 2017 only 7,000 ha of sheep and beef farmland was sold with the intention to convert into forestry. In 2021 more than 52,000ha was purchased by forestry interests, a 36 percent increase on the previous two years.

Carbon only farming (not intended for harvest) is a major driver of the increase in farm sales. In 2020 and 2021, this intended land use was 39 percent of nation-wide farm sales to forestry.

The Overseas Investment Office purchase pathways were also a major driver of the whole farm sales, representing 40 percent of the farm area sold to forestry in 2020 and 2021.

Within Farm Afforestation Areas

While the analysis is for whole farm sales, sheep and beef farms are a mix of grassland and cropped areas plus other non-grazed areas. These non-grazed areas are existing exotic forest, native forest, woody-scrub, wetlands and open water ways.

From 2020 to 2021, 72.6 percent of the total occupied farmland area purchased was in clear pasture and 7.4 percent was grassland with woody vegetation. This gives an afforestation area equivalent to 80 percent of the total farm occupied area. This aligns exactly with the B+LNZ's Sheep and Beef Farm Survey Hill Country Farms where 80 percent the occupied area is productive farmland for grazing and crops on valley floors.

From 2017 to 2020, 65.4 percent of the total occupied farmland area purchased was in clear pasture and 6.7 percent was grassland and woody vegetation, a total of 72.1 percent suitable for afforestation. The higher percentage (80 percent) for 2020 to 2022 indicates a more recent shift towards afforestation onto farms with less steep land with woody vegetation.

Overall, from 2017 the whole-farm purchase area totaled 175,000 ha. Of this, the grassland area for afforestation was 134,500 ha, 77 percent of the total purchased area.

Types of land classes

The research also found that more productive land is now being purchased for afforestation purposes.

LUC Classes 2-5 (identified as highly productive for pastoral or horticultural farming) have grown from 9.5 percent of purchases with the intention to transition into (carbon) forestry from 2017-2019 to 15.5 percent of purchases from 2020-2022.

While more than 50 percent of conversions took place on Land Use Class (LUC) 6 land[1], this land is still highly productive for food and fiber production via sheep and beef farming.

Only 21 percent of conversions took place on high or very high erosion prone land, with more than 78 percent of the purchases occurring on low or medium erosion prone land between 2020-2022.

[1]Land Use Capability classification system (LUC) as used in New Zealand has eight LUC classifications. 1 to 4 are classified as arable land, while LUC classifications 5 to 8 are non-arable. The limitations or hazards to use increase, and the versatility of use decreases, from LUC Class 1 to LUC Class 8. These Land Use Capability classifications are separate to Sheep and Beef Farm Classes 1 to 8 which are based on management systems dictated by altitude, contour, and climate. Sheep and Beef Farm entities are complex with multiple LUCs within each individual farm.

Areas of the country

Investors have also been searching out new areas across the country to plant trees.

In addition to the significant planting in the East Coast regions, Waikato/South Auckland, Otago, and Southland have now joined the regions being converted.

Overall, the latest report shows an increase in areas changing hands in the South Island, potentially due to lower land costs and less competition for the land.

The impact on land prices

A shortage of properties and the continued rise in the value of carbon is seeing demand and price points trend steadily upward with Real Estate agents looking for land with requests for $14,000 to $19,000 per hectare.

Impact of the carbon price of forestry returns

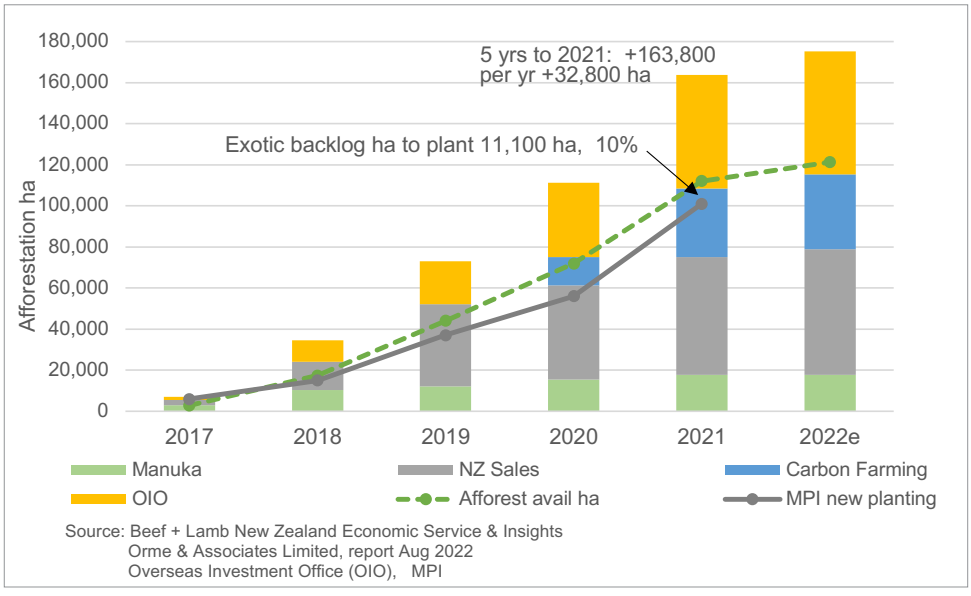
The following table in the Orme report demonstrates the significant impact the carbon price has on production forestry and carbon only forestry returns. This is based on a carbon price of $70 per tonne.

Farming Regime	Cashflow: Years 0 - 10	Cashflow: Years 11 - 20	Cashflow: Years 21 - 29 (incl. log revenue and replanting)	Cashflow: Years 30 - 50	IRR	NPV (8.5%)	Total Cost	Total Revenue	Surplus
Forestry - no carbon	-$426,300	-$70,000	$2,128,465		6.3%	-$137,639	$801,600	$2,433,756	$1,632,165
Sale of first 16 years carbon	$1,116,180	$1,629,480	$2,108,265		31.8%	$1,199,116	$867,600	$5,721,525	$4,853,925
28 Yrs Carbon Only	$1,350,920	$2,538,540	$2,284,480		32.4%	$1,527,099	$618,300	$6,792,240	$6,173,940
50 Yrs Carbon Only	$1,350,920	$2,538,540	$2,544,560	$4,271,100	32.4%	$1,733,033	$838,300	$11,543,420	$10,705,120

Farmer interest in planting trees within their farm

Interest from farmers in the future opportunities of trees on farms remains strong. A recent survey conducted on 70 farms shows that nearly half plan some form of indigenous establishment on farm, 57 percent are interested in planting for soil conservation and 31 percent plan to plant small areas of radiata if it can be counted as part of the farm model for either the ETS or He Waka Eke Noa (HWEN).

Figure 1: Cumulative Afforestation Area (whole farm)



Source: Beef + Lamb New Zealand Economic Service & Insights
Orme & Associates Limited, report Aug 2022
Overseas Investment Office (OIO), MPI

Figure 1 shows the cumulative trend for farmland purchased for forestry in the bar charts. The dotted graph line shows the cumulative grassland area available for exotic afforestation from the Orme report. The solid graph line shows the cumulative area planted based on Te Uru Rākau's survey of exotic tree seedlings sold for new area planting. The gap between the two graph lines identifies the land area backlog to be planted.

B+LNZ Analysis and Comment

B+LNZ has been tracking whole farm sales data on an annual basis for the last couple of years since the cap on the carbon price was lifted and is increasingly alarmed at the scale, pace, and style of land use change across the country.

There is absolutely a role for forestry both in its own right as a productive industry, and in helping to meet New Zealand's climate change commitments, but the scale of change is far in excess of what is needed.

Over the last three years, afforestation areas from whole farm sales averaged more than 40,000 ha each year (including 50,000 ha in 2021). This is much higher than the 25,000 ha per year recommended by the Climate Change Commission to meet New Zealand's pathways towards net zero 2050.

In addition, the amount of land going into exotic forestry within farms is increasing, including on Māori owned land, which means the Climate Change Commission's recommendations are likely being even more vastly exceeded.

B+LNZ is also strongly supportive of the integration of exotic and indigenous forestry within farms. As highlighted in the report there is growing farmer interest in this and can provide a win-win in terms of increasing sequestration within the country, while also continuing to support food production, underpinning vibrant rural communities and ensuring ongoing export revenue critical for NZ's economic wellbeing.

Given the rate at which the carbon price is expected to continue to rise, policy changes are urgently needed as outlined in the next section.

Economic Implications

The rate and scale of whole farm conversions into forestry has significant long-term implications for rural communities and the wider New Zealand economy.

With more than 175,000 ha of whole farms sold for afforestation we could expect to see a decline of around 1 million Stock Units (SU)[2]. If 100 percent afforestation area was planted (134,500 ha) the land use change would equate to:

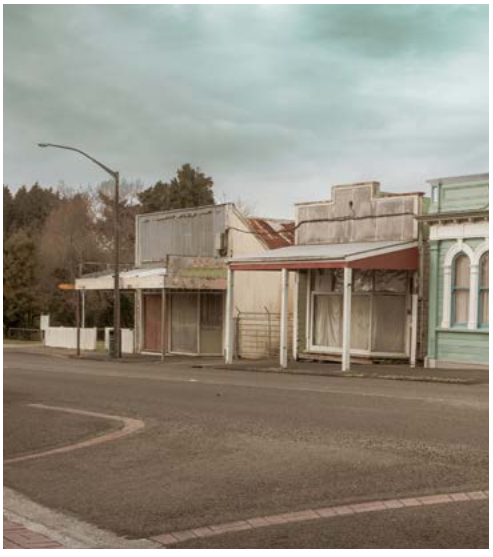
- an annual farm production loss of $170 million at the farm gate, at 2021-22 prices
- with a cumulative production loss of $540 million at the farm gate from progressive planting replacing livestock from 2017 to 2022 as shown in Figure 1.

The above quantifies the impact from 175,000 ha of farmland sold for forestry and the farmgate receipt loss that would have been spent in the district buying farm goods and services, meeting farm family living expenses and meeting tax and payments.

From the farmgate, production moves into manufacturing-processing (secondary sector) where processing adds a further 44 percent value to livestock production.

Export markets drive the sheep and beef farm sector as 90 percent or more of production is exported. The farm production displaced by afforestation can be considered destined for export. At 2021-22 export prices this would equate to lost export receipts of:

- $245 million annually and
- $775 million cumulatively from 2017 to 2022.



The policy concern here for New Zealand is that the land use change to afforestation switches land earnings from export revenue generation to emissions trading of carbon credits which are paid in New Zealand dollars.

B+LNZ is concerned that the country is at risk of permanently decreasing export revenues. Carbon only farming also produces virtually no jobs in the region as there is no harvesting, nor any exports. Carbon only farming was 39 percent of the farmland area sold for forestry in 2021 and is growing.

Unlike previous historic land use change scenarios from sheep into dairy, this time the decrease in revenue and the land use change would likely be permanent.

We are seeing offshore players and carbon farming businesses in New Zealand banking the land now, while there are still low levels of awareness on the topic and before prices per hectare rise any further. This is an example where limited oversight of land use and land use change is causing delayed, but direct, consequences for the wellbeing of our land and communities.

[2]Hill Country and Hill Farms run 4.3 to 9.3 livestock units per hectare. Estimated livestock carrying capacity of whole farm sales for afforestation was on average 7.7 stock units per grassland hectare.

Environmental implications

Not only is this an economic risk to New Zealand, but also poses significant environmental risks which environmental NGOs are increasingly raising concerns about.

Although timber and biofuel could be valuable products in a climate restricted world, the scale and pace of this planting suggests that some of these forests would just be planted and walked away from given the high carbon price, particularly permanent carbon farms not intended for production.

While the 'carbon only' forests will ostensibly 'transition' to native vegetation, recent research by leading New Zealand scientists questions whether this will actually happen.

This could create 'zombie forests', unable to be removed without creating a liability but no longer providing carbon credits to the owner.

Based on research overseas, carbon forestry plantations have elevated the risk of forest fires and, unless carefully managed, can act as a catalyst for emissions increases if the fires occur and the carbon is released from the trees.

Pines can also have negative effects on the instream flows in our rivers. Research has established that rainwater run-off is diminished by up to 40 percent by pine plantations. Widespread plantings in catchments could also limit the water availability in catchments.

Farmers are also concerned that whole farm conversions will lead to increased pests in their area, acting as disease vectors for things like TB. This all has the impact of decreasing biodiversity and increasing climate and animal health risks on sheep and beef farms.

Policy implications

B+LNZ is not anti-forestry we are extremely positive about the opportunities for integrated planting within farm, which is low risk (farmers actively managing their vegetation with pest management and forestry maintenance) and provides an incentive for farmers to retire the land they know is less profitable into a carbon sink, providing supplemental income but allowing for ongoing food production.

We also see a role for production forestry in helping to meet New Zealand's climate change commitments.

We, however, are very concerned about the scale and scope of **whole** farms being sold into forestry and carbon forestry.

The amounts we are seeing are far beyond recommendations by the Climate Change Commission.

In the medium-longer term major changes are needed to the ETS

B+LNZ's primary policy objective is for **some** limits to be placed on forestry offsetting within the ETS.

We are not saying this should be reduced to zero, but we cannot continue to allow 100 percent offsetting.

New Zealand is currently the ONLY country in the world to allow 100 percent offsetting of fossil fuel emissions within the ETS. The EU only allows 10 percent forestry offsetting and California 8 percent. We are a global outlier and this needs to be rectified.

This position is strongly supported by the Climate Change Commission.

The latest report from the Climate Change Commission suggested the carbon ceiling should start at $171/t in 2023, which will drive more land sales if nothing is done. The Climate Change Commission urgently called for action on the ETS and forestry by the Government in their report.

We welcome the Government's recent indications that it is intending to review the role of forestry in the ETS but are frustrated it took this long to start this work and would like to see it fast-tracked.

B+LNZ is commissioning expert advice on policy options for how the ETS could be amended to feed into this process.

The ETS is complex, and this policy process is likely to take a number of years.

Short-term policies are also needed

For that reason, there also needs to be some short-term policies introduced to curb the out of control buy up of sheep and beef land that we are currently seeing.

B+LNZ would like to explore the possibility of further changes to the OIO, limits on exotics going into the permanent category of the ETS, and exploration of rules that could be introduced through the RMA.

OIO forestry and carbon-only forestry account for 55 percent of land purchases between 2017 and 2021 and were 78 percent of farm sales in 2021.

OIO

While we welcome the Government's recent removal of the fast-track pathway for overseas forestry investment in the OIO, this change is unlikely to significantly curb forestry investment through this pathway.

While the rate of approvals may slow, experts we've spoken to still expect this foreign investment into forestry will continue.

We would like to explore further limits on overseas investment in forestry because what we are seeing are incredibly wealthy investors looking to take advantage of New Zealand's unique ETS settings to make money.

We also understand these foreign individuals/companies may be investing in the hope that New Zealand's ETS will eventually be linked up with the EU's ETS in the future and they could use New Zealand credits to offset their emissions. This cannot be allowed to occur.

We acknowledge that New Zealand has international obligations that limit the ability to treat international investors different to domestic investors but would like to explore what could be done in this space.

Permanent Category of the ETS

We were extremely disappointed at the Government's u-turn on the ban on exotics in the permanent category of the ETS and want to explore what restrictions can be placed on this new category before it comes into effect in January 2023.

Given the Government acknowledges that there are significant issues with this type of carbon investment, we are dismayed they have virtually completely reversed this decision as it will be harder to change things once it comes into effect.

We acknowledge the interests of Māori and would like to try and find a policy solution that didn't ban exotics completely but focused more on the exclusion of **whole** farms being sold into exotic forestry to go into this category, but allow exotic plantings **within** farms to still access this category.

Exotics in the permanent category of the ETS are able to receive carbon credits for 50 years compared to 16 years in the general category, because of the expectation they will transition to native vegetation in the future.

This forestry will never be harvested.

This type of investment into carbon only forestry provides very limited jobs as there is no pruning or harvesting, no exports, and there are major concerns in the scientific community about whether the transition from exotics to native vegetation will actually happen.

We support the exploration of bonds being required for larger scale "carbon-only" forestry investment and stricter management requirements to ensure that there is money available to cover future environmental management if the investor decides to walk away in 50 years' time. While this may improve the environmental management of this type of forestry, it is unlikely to curtail the pace of investment.

Resource Management Act

We welcome the Government's recent release of consultations on under the Resource Management Act with respect to the NES-PF and potential national or regional control around the scale and pace of forestry investment.

We support expanding the scope of the NES-PF to include carbon only farming, as this type of activity has to be subject to the same environmental rules as production forestry.

We also support the requiring of exotic plantation and carbon forests to complete forest management plans; and requiring additional wildfire management for individuals.

But while needed, neither of these management policies will curb the amount of investment in carbon only farming as the rates of return are so high. It will also be important to ensure that these rules are proportionate to the scale of production (and therefore risks) and do not place too high a burden on farmers looking to integrate small blocks of trees within farms.

We support further work on assessing whether the use of National Planning Instruments to support district/ Regional Council's decisions to manage the social, cultural, and economic impacts of carbon forestry.

We also support further work on what conditions (at district, regional, or national levels) could be imposed as part of resource consent conditions for new/existing carbon forestry plantings. Conditions could limit the types of land, scale of planting, and types of planting allowed for exotic plantation or carbon forestry. We want to ensure that these limits can manage the risks and impacts of carbon farming we see while also providing enough flexibility for our farmers to effectively integrate carbon forestry into their farming systems.

We also strongly support further policies that support the integration of trees within farms

Finally, we would also like to see policies that encourage the integration of trees on farms, particularly native trees, which would help meet New Zealand's climate and biodiversity objectives.

There are significant opportunities for New Zealand to meet its climate change targets through additional planting and management of trees within farms rather than the current policy settings which are encouraging whole farm conversions.

The sector's view is that integration is a win-win situation where New Zealand can meet its climate obligations and still maintain livestock production – which is in line with provisions in the Paris Agreement about food production.

There is currently a significant mismatch between recognising and providing credit for the sequestration on carbon farms, and not recognising the sequestration and wider environmental benefits of native vegetation occurring on sheep and beef farms.

This view is also strongly supported by the Climate Change Commission and environmental NGOs.

The Government needs to develop effective incentives for tree planting within farms including greater recognition of on-farm sequestration as recommended in He Waka Eke Noa.

We would also like to explore biodiversity credits or other ways of supporting farmers to plant new native trees and their on-going protection through fencing and pest control.

Next steps

B+LNZ wants to be part of the conversation to urgently address the issues raised by the report. We have already put forward a range of potential policy solutions to the issue of wholesale land-use change as a starting point.

We're calling on the Government to work with us and other groups to develop and implement options before the effects on New Zealand's food production and on its rural communities become much worse.