

Use carbon farming as additional farm income

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As forestry investors snap up land for carbon farming, farmers are feeling anxious and unheard

Drystock farmer Niels Hansen says farmers across the country may see economic benefits if they add carbon forestry to their farms.

Hansen, wife Fiona Howatson, and his parents Peter and Grethe Hansen have planted more than 15 per cent of their Taranaki dry stock farm in carbon forest, with 217 hectares planted in *pinus radiata* and 8 hectares planted in mānuka (*Leptospermum scoparium*).

Hansen's parents immigrated to New Zealand in 1964. Having some forestry on a farm is a Danish way of life, so they continued the tradition here in New Zealand. It gave them timber for fence posts and acted as a cost-saving measure in the early days.

"We are almost on our third rotation of trees now. We have been in the emissions trading scheme (ETS) with our first batch of trees for over a decade. We have also been considering how we can expand our forestry and so have been adding a lot of trees over the past four years, planting over 200ha of additional trees," Hansen says.

On many drystock farms you can improve your performance by removing some steep sections and using flatter, higher fertility areas more productively, says Niels Hansen who added carbon forestry to his farm.

The region's council has funded the planting of pine trees after flooding more than a decade ago destroyed many farms in the area. On Hansen's farm alone more than \$90,000 worth of fencing was destroyed by mudslides. They spent more than \$64,000 in the first



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month after the mudslide to fix road access on the farm.

The council released a stress fund for farmers that financed the planting of trees with the aim of mitigating future damage by stabilising hills and preventing silt loss from steep country.

The stress fund paid for all planting expenses and as it was required that forest sections had to be fenced, the fund also allowed for half of the fencing expenses to be covered. The scheme is still active.

Hansen says it led to a number of positive unexpected results.

Taranaki beef farmer Niels Hansen says if every drystock farmer plants 5 per cent of their land in carbon forest, then all the profit to be made will be in the hands of farmers and rural communities, and productive farmland will not be lost.

Although the new forest reduced the farm's grazeable area, it affected his production positively and the ETS income also had monetary benefits, for example access to funds to pay off debt.



Grazing

Planting forest on the steepest parts of the farm meant the grazeable area was reduced by almost 15 per cent.

Hansen had already been following intensive grazing practices for some time and losing this grazeable area meant he had to sharpen up his management even more. However, he soon realised the farm's performance increased when he separated the steepest areas.

While other farms of similar size in the area might have an average of 50 paddocks, he runs 400 paddocks, with about 60 mobs shifted every two days. Having followed this intensive grazing approach even before he began converting more land to forest meant he already understood the increased paddock management that would be needed.

"It will not be the same on every farm but on many drystock farms you can improve your performance by removing some steep sections and using flatter, higher fertility, areas more productively. During late summer and winter the metabolisable energy (ME) value on steep, low fertility areas, are often not sufficient to fatten cattle on and depending on the ME might not even be enough for maintenance. This impacts animal performance and pasture growth rates," he says.

Read more:

- [The detail: Billion Trees scheme has some NZ farmers worried](#)
- [Carbon farming can provide better returns than sheep and beef](#)
- [Foresters bailing out of 'failed' ETS scheme](#)

There are also other reasons to exclude some areas. By late October low-fertility grass on steeper sides is seeding and you have to fight with stock to eat it. Cattle are lazy and prefer being on flat sections and often already avoid steeper areas earlier in the season as they are after better feed. Excluding these areas therefore means stock are always on productive grazing. Smaller paddocks mean they always eat quality forage and they consume more as they find it palatable.

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Literature shows an average farm has a feed conversion ratio range of up to 27:1, meaning 27kg of dry matter is consumed to produce 1kg of saleable beef. In systems utilising high fertility grass through intensive paddock management this can be brought down to as low as a 14:1 conversion ratio, Hansen says.

As a result, the stocking rate of the farm has gone up and the performance has increased.

“Key to keeping high performance is maintaining intense rotation after winter. The extra ME that regrowth generates makes a significant difference to animal performance.”



Having low fertility areas of a farm planted in forest makes economic sense for a number of reasons, says Niels Hansen

Carbon forests

“One should not obsess about trees but trees taught me to do more on my farm,” Hansen says.

Hansen planted 37 hectares of pine on the farm in 1992. Those will be harvested in 2022. Besides the funding for planting being available a decade ago being a motivator for him to jump into carbon forestry, a large motivator was the fact that half of the fencing costs were covered and his management principles meant he “likes to fence”.

Council originally paid \$2000/ha to plant forest, an amount that covered costs. It also paid \$15 per metre for baton fencing, or \$7 if electric fences were used.

Under the ETS, farmers have the option of planting pine or native forest. But pine trees make more economic sense. The amount of carbon being sequestered grows as the tree grows. Native species sequester about 1.3 tonnes of carbon per hectare by year three of growth. They max out at about 12 tonnes per hectare per year. They only reach the maximum by year 11 of growing.

Radiata pine on the other hand sequesters about 6 tonnes of carbon per hectare per year by year three of growth. By year four it reaches the long-term average of 25 tonnes per year.

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At the latest auction, the carbon price was settled at \$68 per tonne per hectare per year.

Carbon from trees in the ETS scheme can accumulate and sell carbon for 16 years. Once they are harvested they need to be replanted. The replanted trees then become permanent forest and you don't have another cycle of carbon that can act as income.



Niels Hansen says money needs to stay in rural communities and foreign investors in carbon forestry might not feel the same.

MIKE SHAW/STUFF

Hansen believes having low-fertility areas of a farm planted in forest makes economic sense for a number of reasons. Carbon under the ETS scheme pays for 16 years, with the remuneration growing as trees grow older and are able to store more carbon.

At the current price a farmer gets on average about \$400 per hectare a year by the third year after a forest is planted. By year five that grows to about \$1700 per hectare per year.

In contrast a hill country drystock farm may make \$200-\$250 per hectare a year profit.

“All these benefits derive from something that is partly funded, pays you for carbon, improves your land and your stocking rate and is eventually permanent production forest that stabilises the land. That day the fence goes up, the farm becomes more efficient and separates contours.”



SUPPLIED

Thousands of hectares of hill country sheep and beef farmland has been converted to forestry with farmers fearing land ideal for raising stock has been lost.

Hansen said that at a recent Ministry for Primary Industries conference it was stated that about 380,000 hectares of forest needs to be planted to meet New Zealand's carbon sequestration goals. This land will primarily be owned by private corporations and people outside rural communities, and will often consist of farmland that has been converted into forest. The management will also be driven by profit. Such areas will never be farmed again and the land will be lost to food production forever.

Drystock farms cover about 7 million hectares of land in New Zealand and Hansen believes if farmers plant 5 per cent of their farm in carbon forest it could mean all the private land planted solely for carbon forestry is not needed.

“If every drystock farmer on the 7 million hectares farmed in drystock plants 5 per cent (350,000 hectares) of their land to carbon forest then all the profit to be made will be in the hands of farmers and rural communities, and productive farmland would not be lost,” Hansen says.

“The 380 000 hectares, each producing 25 tonnes of carbon per year, traded at an average of \$80/tonnes could mean about \$760 million profit in the hands of farmers every year. If not, then there is leakage out of the rural economy. This is on par with the profit that farmers generate from the entire 23 million lamb crop,” Hansen says.

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