

NZ Forestry in 2050 – a Backwards Look into the Future

Peter Clark

Presented at NZIF 2017 Conference, 4th September 2017, Rotorua.

It is the year 2050. NZIF President Thomas Berg¹, whose grandfather was recognised for services to forestry in 2004 with an Officer of the NZ Order of Merit, is interviewed on the journey of the forestry sector over the last 30 years.

So why is forestry such a major land use for our non-arable productive land Thomas?

“I recall when I was a teenager that the forestry sector did not have its own Minister or Ministry and that lots of landowners did not pay much attention to the importance of trees on their farms. Of course, we got our own Minister in cabinet when Labour / Greens took power in the 2020 election and separated both forestry and fishing out from the Ministry for Primary Industries.

There was plenty of talk and widespread public awareness that pastoral intensification was polluting our fresh water lakes and rivers during all the 2020's but the grandparenting of historic pollution rights meant there was a disincentive to plant trees. The farmers talked a lot about fencing streams and riparian planting but there was no easy solution to diffuse nitrogen – so nothing much changed for the next 15 years – and the rivers degraded even more. The Greenpeace campaign of 2025 did erode world consumer confidence in our Pure NZ brand, to the extent that both tourism earnings and dairy exports fell by 15% per annum over the following 3 years. Everyone was feeling sorry for the farmers because some were going bust and the media showed them as victims of circumstances beyond their control, but a proposal to raise taxes to provide dairy and meat price support to farmers did not get legs after the urban voters worked out what that meant for them.

It was not until the dual hit of plant-based milk and meat started to take market share from NZ producers in the late 2020s that farming for capital gain was no longer supported by the banks and rural land values fell – in some cases by 50%. Forestry found itself as a land-use of choice at both political and landowner levels.

“The climate change debate helped of course. NZ had few options to meet the 2020 – 2030 targets set by the 2016 Paris Accord, with tree planting being a pretty obvious option that was talked about by all the political parties at the time. Although the world is now near to Zero carbon emissions thanks to that new lithium - oxygen battery that stores solar energy so well, at the time we were slow to react compared to other developed nations. The resulting trade sanctions limited access to some of our most valuable safe food markets in Japan, US and Europe. The cadmium scare from the palm kernel extract supplementary feed did not help rural land values either and together with the banks' reaction to call in loans of about 25% of pastoral farms really changed attitudes towards re-gaining of a clean green image. Now of we all know that pastoral farming real milk and meat and selling this at 5 times the price of the plant-based stuff is working well, albeit off much less intensive and fewer farms and in lower volumes than we used to produce.”

So Thomas, planting picked up from the late 2020s and the charts show it reached 80,000 ha of new land planted per annum for 10 years. That is a 50% increase in the plantation forest area over a decade. How did the industry achieve that?

“Good question. At first the foresters figured we would need to hire hundreds of seasonal workers from the Pacific Islands and Philippines, and for the first 3 – 4 years we did do some of that. But

¹ Thomas Berg is the grandson of Peter Berg ONZM who was President of the NZ Institute of Forestry from 1998 - 2002. In the year 2017 Thomas was 19 years old and studying IT Engineering at Victoria University.

after that we started getting more and more kiwi resident workers coming to us looking for the work. They came not only from the provincial towns but also from the bigger cities. I think there were a few factors that made planting trees an attractive job for so many. Firstly the Mums started to understand that we had zero tolerance for drug impaired workers and being able to reliably test for that at the start of each workday was a breakthrough. Secondly the pay rates were attractive by most manual worker standards. We provided good training and for the best workers a career path into chainsaw thinning and the driving of harvesting machines by video screen and remote control. We got more women into planting crews. The tough job of delivering trees to the worker on the hill was of course solved with the drone planting box delivery. Maybe one day we'll get the drone to plant the tree to – but we haven't quite cracked that yet.

“Also we have to remember that alternative manual jobs were disappearing fast. Robotics and artificial intelligence saw to that. People still wanted and needed to work. We provided that opportunity and still do today.”

Great – but how did the industry get the yields up from 25 to now nearly 40m³/ha/year?

“Back in 2017 the NZFOA revised its Science and Innovation Plan and put a lot of focus on improved radiata productivity. The main focus was genetics but GxE knowledge, disease resistance and tree nutrition were all part of it. The Radiata Pine Breeding Company completed the radiata genome map in 2019 – the first in the world to achieve this for any conifer species. This helped dramatically speed up the genetic improvement programme and GxE matching for climate-induced drought tolerance on the East Coast. Then in 2026 when then National/The Opportunities Party coalition approved gene editing for operational deployment we were able to make further gains, mostly by turning off both flower and pollen production. That also reopened the ability to plant Douglas fir in the South Island degraded and now abandoned tussock dry stock farms as well – simple stuff really, just a shame we did not get onto it earlier.”

I note Thomas that we are now processing 70% of our logs domestically. From memory it was only about 50% on a lower total harvest back in 2020. What do you put that down to?

“A couple of things. Firstly the 2035 World Conference of Parties Climate Change Agreement concluded in Dunedin brought ship bunker fuel into the new International Agreement. With carbon at \$70/unit that really hit hard on all bulk freight. The advantage the Chinese had enjoyed of low-cost sea freight for logs was suddenly gone. They pretty quickly started asking for sawn timber and plywood. By the way – well done to the now retired Dunedin mayor and former forester Grant Dodson for getting that conference to Dunedin. I guess timing it with the Bluff oyster season helped!

“Secondly the Wood Encouragement policy that Winston Peters got as part of his coalition agreement with National in 2017 was the main reason that two thirds of all 3 and 4-story residential in-fill houses in the Auckland inner suburbs are now made out engineered timber frames and panels. Following that policy, architects and engineers started to show a lot of interest in learning about how to design and build in wood.

“We were slow to adopt wooden high-rise and industrial structures following the Christchurch and Kaikoura earthquakes but following the removal of the Emissions Intensive Trade Exposed NZU subsidies given to steel and cement, and once carbon prices reached \$50, the economic drivers were there to switch to the tilt slab pre-fabricated wooden panel construction system. The expanded factories in Nelson, Rotorua and Northland now take all the suitable unpruned logs they can get for these engineered wood beams and panels. They are now also exporting kit-set apartments and

industrial buildings throughout the Asia -Pacific region, and without tariffs, thanks to the successful conclusion of the Regional Comprehensive Economic Partnership in 2020 led the then by Trade Minister Hon. Todd McClay.

I guess the last major change that I've observed, especially over the past 20 years or so Thomas would have to be in the way we harvest and transport logs. Remote controlled, cable assisted harvesting was under development when your grandfather retired and are now the norm, albeit now battery powered, but who would have thought that loading of logs from a few log processing yards would now be automated for a whole region and controlled from a 1-person consul in town – and he/she appears only to be there to react to any alarms that go off.

“Yes exactly, and probably the younger generation today, that have never had to learn to drive a car, let alone a truck, cannot conceive that we actually had cabs on logging trucks with a person in them. Why would we have needed that? Of course what they don't realise is that GPS and sensor control of our transport fleet was not feasible in those days. Imagine the stress on those drivers if the trucks had no brain like they do today! Thank goodness we moved on from those days.”

Thanks Thomas – what a wonderful journey eh! I wonder what the next 30 years will bring us!