

Submission to Productivity Commission on the Low Emissions Economy Report.

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In addressing one key environmental challenge – climate change; it is imperative that the Commission does not recommend strategies that will adversely affect others – soil losses, for instance; the degradation of waterways and the ocean; or losses of biodiversity.

After reading the Commission's report, I agree with Rod Oram that in its draft report, 'the Commission puts far too much faith in forestry as the biggest driver of our emissions reductions over the next 30 years,' for the following reasons:

- While exotic trees such as *pinus radiata* sequester carbon at a rapid rate, the carbon credits must be repaid when the trees are felled. This is a temporary fix, like putting New Zealand's carbon debts on a credit card;
- Under current forestry regimes, where exotic trees are mass planted in highly erodible landscapes (eg on the East Coast), there is extensive environmental damage at **planting**:
 - to biodiversity with the spraying of competing vegetation, using some defoliants that are banned in the EU, but permitted in New Zealand;
 - to soils with the cutting of tracks and forestry roads;
 - to waterways and marine environments with fine sedimentary deposits;and at **harvest**:
 - to biodiversity with loss of native understories etc;
 - to soils with erosion stripping the land, sometimes to bare rock;
 - to rivers and marine environments from sediment and slash. This includes aggrading river floors and debris dams that increase flooding, harbours that need dredging, impacts on marine environments etc;
 - to riparian land and infrastructure like roads and bridges, which are often damaged by increased water flows (trees take up about a third of the rainfall, so flows increase post-harvest);
 - to people, with high injury rates among forestry workers (papa rock terrain is treacherous);
 - to tourism operations, from streams of logging trucks on highways, and loading of ships at ports (eg in Gisborne, which affects the Portside Hotel & the camping ground)
- There are high costs in carbon emissions, damage to roading infrastructure including bridges, accidents with forestry trucks in transporting logs to ports;
- In addition, most plantation forestry is owned offshore, so many of the financial benefits from subsidising forests are expatriated;
- Most forestry companies are structured to avoid paying tax, and pay little by way of rates, so that medical costs, costs of road maintenance and repair are passed on to ratepayers and taxpayers.

When these 'externalities' are factored in, our best guess is that on the East Coast for instance, the direct economic costs of exotic forestry far outweigh the gains - a view that is widely shared across the East Coast community.

For these reasons I agree with Rod Oram that ‘the Commission needs to do far more work on how we can achieve two big transformations in forestry: ensuring we plant far more permanent and harvestable native forests and far fewer exotics, particularly radiata pine which is a poor-quality wood; and using far more radiata pine and other species for construction, biomaterials and biofuels. Doing so would significantly reduce emissions while increasing the economic returns to forest owners.’

On particular points in the Commission’s report, I offer the following comments:

1. **On p. 251** it is suggested that *“with a suitable seed source, unharvested exotic forests could eventually revert to native forests as native species re-establish naturally.”* I agree with MPI that there is little evidence that this is a viable option, and in many ways it seems perverse. There is no guarantee that unharvested exotic forests will revert to native forest; on the contrary, it is clear that they will often continue to produce seed that can colonise native bush and other habitats, requiring expensive control. A mix of pinus radiata and native bush is unattractive to many eyes (including those of tourists). If we are establishing permanent forests to sequester carbon, it seems a far better investment to plant or revert native forests, which can then act as seed source for further reversion (around waterways for instance), enhancing biodiversity in the process.
2. **On p. 252**, the Commission notes: *‘Based on current practices, native forests are more expensive to plant (than exotic).’* There is no need for native forests to be planted like pinus radiata plantations, with gangs planting nursery grown plants. As we have learned by practical experience in a major regeneration project on the East Coast, (www.longbushreserve.org), strategic plantings of groves of berry-bearing native trees provide habitat for native birds that then disperse the seed into adjoining land, free of charge! Reversion can happen very quickly and economically under these circumstances – from pasture to closed canopy in 8-10 years in our direct experience.
3. **On p. 252**, the Commission states *“In the first 30 years, native forests sequester only one half or a third as much carbon as pinus radiata forest (David Evison pers. comm.)”* It is not acceptable for the Commission to base such comparative statements on personal communications. The research must be peer reviewed and published if such statements are to be credible. As a member of the Air New Zealand Sustainability Panel, I have sought to find robust, peer reviewed research to back up such assertions, and failed. While there is robust research based on many studies on carbon sequestration rates for pinus radiata plantations, which have been studied in great depth and detail, for different ages of forest in different regions of NZ, this is not the case for native forests, although these are highly variable in their composition and growth rates by region. In my view, we do not yet have the research from which to make reliable comparisons of the carbon sequestration rates of exotic plantations and native forests of different kinds.
4. **On p.252**, the Commission notes that *“These accounting conventions and practical considerations flow through to specific forest accounting rules for the purposes of the NZ ETS. For instance only forest species that can attain a mature height of 5 metres or more are included (MPI, 2018). This could exclude, for instance, mānuka grown for the purposes of honey.”* If this is the case, the Commission should recommend that such accounting rules are immediately changed. The accounting rules for carbon

sequestration should capture the total carbon sequestered by any forest, including by smaller species. Otherwise the rules will privilege exotic plantations over native forests, which are multi-tiered and will capture carbon in each of their layers of vegetation. It would be perverse to penalise a promising industry like Manuka honey production for the sake of arbitrary accounting rules.

5. **On p. 252-3, the Commission states:** *'E. G. Mason and Morgenroth (2017), for example, identify 1.3 million hectares of highly erodible land that could be used for planting forests.'* For all the reasons noted above, this is precisely the kind of land that should be planted in permanent native forests, rather than exotic plantations that are regularly harvested, causing extensive environmental damage. **Please note this recent research: <https://i.stuff.co.nz/environment/102675332/new-study-finds-pine-forest-link-to-fine-sediment-in-waimea-moutere-estuaries>**

It would be an extremely poor outcome of a transition to a low emissions economy if highly erodible lands were to be covered with harvested exotic plantations in New Zealand, causing extensive damage to waterways, marine environments and biodiversity that will require expensive remediation, or which may not be able to be reversed.