Australian
National
University

Professor David Lindenmayer AO
BSc, DipEd, PhD, DSc, FAA, FESA
Australian Laureate Fellow

Fenner School of Environment and Society

3 September 2019

Senate Select Committee on Jobs for the Future in Regional Areas

To whom it may concern,

Please see attached for my submission to the **Senate Select Committee on Jobs for the Future in Regional Areas**

I am an ecologist who has worked in many parts of rural Australia for almost all of the past 36 years. This includes work in the native forests of Central Victoria, the softwood plantations of southern NSW, the coastal forests and heathlands of NSW, and the agricultural areas of northern Victoria, NSW, and south-east Queensland. My regionally-based field teams and I have an international scientific reputation for the quality of our work in these parts of regional Australia.

My submission relates to job opportunities in the plantation timber processing industries in Victoria, as well as potential major new sources of jobs in forest carbon storage and management industries in regional Victoria. My submission also highlights the roles that The Australian National University can play in helping with industry transition and identifying new employment and growth opportunities for regional Australia.

Yours sincerely

Professor David Lindenmayer AO

NEW EMPLOYMENT OPPORTUNITIES IN THE NATIVE FOREST CARBON SECTOR AND THE PLANTATION PULPWOOD SECTOR IN VICTORIA

Summary

The native forest sector in Victoria has been haemorrhaging significant numbers of jobs in the past 5 years. Logging in native forests has limited public social licence to operate, in part because it has major negative impacts on water security and on biodiversity, leads to substantial carbon emissions and elevates fire risks. **There are new employment opportunities in the management of native forests for carbon storage, as well as in native forest-based eco-tourism businesses.**

The shortfall in timber from exiting logging in native forests can be readily filled by eucalypt pulpwood from the plantation sector in Victoria. Presently, almost 75% of all eucalypt pulpwood in Victoria is exported overseas without being processed, leading to a major missed opportunity for employment and higher value wood product manufacturing. **Many thousands of regional jobs could be created by in-State processing of a greater proportion of Victoria's plantation eucalypt timber.**

In summary, Victoria could generate many thousands of new jobs in an emerging carbon management sector in its native forests (at the same time as securing water supplies and prevent further losses of biodiversity). It also could grow a major eco-tourism sector around its native forests. **Finally, Victoria could and should capitalize on in-State plantation eucalypt timber processing and thereby add significant new jobs in regional communities.**

Increasing job opportunities in plantation timber processing

Regional employment in native forest logging is declining and fundamentally uncertain due to a number of interacting factors. The only real certainty of future timber supply for the forest industry is from plantations. It is vital that the inevitable transition out of native forest logging is managed to maximise regional employment through the creation of new forest industries, and that current industries that process plantation timber retain and build in-State employment.

The current state of the industry in native forests

A total of 87% of all native forest logged in Victoria is for pulp, woodchips, pallets and sawdust [1]. The availability of the high value product of native forest logging – sawlogs – is rapidly declining as a result of overcutting due to efforts to maximise sustained yields. The yield allocations were set at unsustainably high levels due to Woodstock and Stanley resource modelling failing to account for the effects of disturbances (such as recurrent wildfires) in sustained yield calculations [2].

This continuing over-allocation of the resource, along with the effects of past fires, high risks of repeated fire in the future, past overcutting, increasing environmental concerns (such as biodiversity conservation and water supply), as well as declining community support, all strongly indicate there is little certainty for long-term access to timber from native forests.

The plantation sector

The forest industry in Victoria is dominated by the plantation sector in terms of sawn timber, pulp logs, and overall employment. Approximately 88% of all sawn timber in Victoria comes from the plantation estate [1]. The value-added value of the plantation sector is approximately three times that of the native forest sector, even when compared to the most productive native forest region of Victoria – the Central Highlands Regional Forest Agreement (RFA) [3].

The expansion of the Victorian hardwood plantation estate has resulted in significant growth in hardwood pulp log production, increasing from 76,500 m^3 in 2001 to 3,900,000 m^3 in 2017. Most of this is exported as low value unprocessed product. Indeed, of the 3.9 m tonnes of hardwood eucalypt pulp logs produced in Victoria, 2.9 m tonnes was shipped out of state [1].

The largest processor of pulpwood timber in Victoria is Australian Paper, and its preferred feedstock is plantation wood. A transition to 100% plantation feedstock for its Maryvale Mills would require around 600,000 m^3 of native forest pulp logs to be replaced by hardwood plantation pulp logs to maintain current production capacity. Given the rapid expansion of Victoria's hardwood plantation estate, there is more than sufficient plantation feedstock for this to occur, and such a transition has been deemed technically feasible for nearly a decade [4]. A transition to 100% plantation feedstock would free and conserve the native forest resource for higher value economic activities, including water production, tourism and carbon storage (see below).

The majority of hardwood plantation tree species to replace the native forest input to the Maryvale Mills would consist of Tasmanian Bluegum. This wood has a higher basic density (kg dry fibre/m^3) compared with the native forest Ash species, which gives the pulp logs more 'dry tonnes' of weight (kg) per cubic metre of wood [4]. Thus, there are processing advantages to a transition to hardwood plantations.

The total number of people employed in 2017 in the Victorian forest industry (native forest and plantation sector combined) was 14,475 [5]. This is for direct, primary and secondary processing (but excluding the Green Triangle in western Victoria). Of this, the number of jobs in the plantation sector is 88.6% of the total workforce [5]. The total number of <u>direct</u> jobs in the native forest sector (including ~ 115 VicForests employees) is 350 Statewide (based on a submission from VicForests to the Forest Stewardship Council).

There has been a 25% decline in the total forest industry employment between 2011 and 2016 – a loss of approximately 7000 jobs. The biggest declines have been in manufacturing. Schirmer et al. [5] argue that this is because a substantial proportion (~75%) of the plantation pulpwood timber from western Victoria is exported overseas. There is opportunity to significantly increase regional employment in Victoria by retaining the plantation feedstock that is currently exported, and processing it in Victoria.

Potential options for redirection of plantation eucalypt pulpwood feedstock to processing in Victoria by Australian Paper may reside with its parent company, the Nippon Paper Group. It already imports to Japan woodchips sourced from hardwood plantations across Victoria and more widely across Australia. In 2016, the Nippon Paper Group exported 581,280 tonnes of woodchips from Australia to Japan, much of it sourced from plantations.

Natural asset values

Logging operations in native forests have major negative impacts on water yield and biodiversity [6], generate significant carbon emissions [7], and increases the risk of high severity wildfire [8]. The replacement of native forest pulp with plantation feedstock would solve major water problems – including for Melbourne, for regional town water supply, and irrigated agriculture. It would grow jobs in the agriculture sector, as well as grow jobs in the plantation and wood processing sectors. It would also solve conflicts around water and biodiversity, and lead to carbon storage outcomes.

Environmental and Economic Accounting using the United Nations SEEA Framework [9] has quantified the trade-offs involved in ceasing native forest harvesting in the Central Highlands RFA area and moving to a plantation-only forest sector. The economic gains from ceasing native forest harvesting are substantial [3, 10] and are likely to be even larger at a Statewide level given that native forest logging operations in areas such as East Gippsland have been uneconomic for some time [11]. The State of the Forests report indicated a need to adopt accounting practices more broadly – including environmental and economic accounting for carbon in forests [12].

The Victorian Government should embrace a policy of best and highest value for natural assets. Environmental and economic accounting work has shown that the best and highest value for plantations is timber production. Plantations can produce up to 14 times the wood volume per ha relative to native forests [13]. The best and highest value for Victoria's native forests for is water production, tourism, and carbon storage [3, 10]. A focus on a policy of best and highest value for

natural assets would lead to more jobs, and indeed better, more secure and longer lasting jobs in a more diversified and stronger State economy (as has been seen from examples elsewhere around the world; see [14]).

Opportunities in a new forest carbon storage and carbon management sector

Global analyses indicate that native forests are six times better than agroforestry and 40 times better than plantations at storing carbon [15]. There are likely to be significant job opportunities associated with managing native forests for carbon storage and increased tourism. Key activities may include (among others)

- fire suppression,
- control of invasive species that can affect forest growth (such as Sambar Deer),
- fully restoring areas of forest where there has been past forest regeneration failure, and
- debuilding parts of the currently very extensive road and track network (covering many thousands of kilometres; see [16]) where tree growth is impaired [17].

Development of appropriate carbon methodologies will be central to realizing the economic benefits of carbon storage both from the conservation of native forests and the expansion of the tree plantation estate. Many major corporate entities in Australia and overseas have indicated a strong desire to take action on climate change and are seeking ways to invest in secure long-term carbon storage, especially in forests. This means that, with appropriate carbon methodologies, there are important opportunities to put a significant monetary value on carbon and then develop new income streams from such investments. Such funding streams could, in turn, be used to support critical infrastructure such as roads, schools, and hospitals.

If wood production in Victoria is to be extensively based around plantation forests, and native forests are to become key to carbon storage (and water production), then the institutional arrangements for bodies such as VicForests will need to be re-considered. One option is to re-purpose the function of that agency to become a carbon manager (and rebadge that entity; e.g. as "VicCarbon"). That agency would then have responsibility for the management of a valuable carbon asset and, accordingly, seek ways to maintain and build that asset.

A key role for universities in helping with industry transition and identifying new employment and growth opportunities for regional Australia

Universities such as The Australian National University can assist governments in identifying new industries (such as the carbon storage industry) and well as provide the background science, economics and social science to facilitate in industry transition. For example, The Australian National University can assist:

- Through its expertise in Environmental and Economic Accounting. This is critical for determining the best and highest values of natural assets.

- Through its expert social science that can assist in documenting the economic and social benefits of industry transitions. There is a well-established literature for early and successful transitions with important lessons including the creation of new employment opportunities, and approaches to creating an appropriate social safety net for workers.

- Through developing carbon methodologies to help secure maximum return on carbon-dense assets such as in Australian native forests.

References

1. ABARES. (2018) *Australian forest and wood products statistics: September and December quarters 2017.* Australian Bureau of Agricultural and Resource Economics and Sciences.
2. Lindenmayer, D.B. (2017) Halting natural resource depletion: Engaging with economic and political power. *The Economic and Labour Relations Review* 28, 41-56.
3. Keith, H., Vardon, M., Stein, J.A.R., Stein, J.L. and Lindenmayer, D.B. (2017) Ecosystem accounts define explicit and spatial trade-offs for managing natural resources. *Nature Ecology and Evolution* 1, 1683-1692.
4. Poyry Management Consulting. (2011) *VicForests and Australian Paper: Review of Issues Affecting the Transition of Victoria's Hardwood Processing Industry from Native Forests to Plantations.* Poyry Management Consulting (Australia) Pty Ltd.
5. Schirmer, J., Mylek, M., Magnusson, A., Yabsley, B. and Morison, J. (2018) *Socio-economic impacts of the forest industry.* University of Canberra and Forests and Wood Products Australia.
6. Taylor, C. and Lindenmayer, D.B. (2019) The adequacy of Victoria's protected areas for conserving its forest-dependent fauna. *Austral Ecology* 44 (1076-1090).
7. Keith, H., Lindenmayer, D.B., Mackey, B.G., Blair, D., Carter, L., McBurney, L., Okada, S. and Konishi-Nagano, T. (2014) Managing temperate forests for carbon storage: impacts of logging versus forest protection on carbon stocks. *Ecosphere* 5(6), Art. 75. [online] http://dx.doi.org/10.1890/ES14-00051.1.
8. Taylor, C., McCarthy, M.A. and Lindenmayer, D.B. (2014) Non-linear effects of stand age on fire severity. *Conservation Letters* 7, 355-370.
9. United Nations, (2012) System of Environmental-Economic Accounting Central Framework, United Nations, New York.
10. Keith, H., Vardon, M., Stein, J.A.R., Stein, J.L. and Lindenmayer, D.B., (2017) Experimental Ecosystem Accounts for the Central Highlands of Victoria. Final Report, The Australian National University and the Threatened Species Recovery Hub, Canberra, Australia. Available at http://www.nespthreatenedspecies.edu.au/Ecosystem%20Complete%20Report_V5_highest%20quality.pdf.
11. VicForests. (2013) *Corporate and business plans, 2013-2014 to 2015-2016.* VicForests.
12. Government of Victoria. (2018) *State of the Forests 2018 Report.* Commissioner for Environmental Sustainability Victoria.
13. Department of Agriculture (2016) *Plantations and farm forestry*. http://www.agriculture.gov.au/forestry/australias-forests/plantation-farm-forestry, (accessed 8 August 2019 2019).
14. Powers, T.M. (1998) *Lost Landscapes and Failed Economies.* Island Press.
15. Lewis, S.L., Wheeler, C.E., Mitchard, E.T. and Koch, A. (2019) Restoring natural forests is the best way to remove atmospheric carbon. *Nature* 568, 25-28.
16. Lindenmayer, D.B., Blair, D., McBurney, L. and Banks, S. (2015) *Mountain Ash. Fire, Logging and the Future of Victoria's Giant Forests.* CSIRO Publishing.
17. Rab, M.A. (1998) Rehabilitation of snig tracks and landings following logging of *Eucalyptus regnans* forest in the Victorian Central Highlands - a review. *Australian Forestry* 61, 103-113.