

Submission to FIAC Strategic Directions Paper.

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Churchill Fellowship study *'Private forestry timber marketing, value adding, and sustainable management certification, in ten Northern Hemisphere countries'*

Gottstein Fellowship study *'Energy from Wood – policies, logistics and economics of bioenergy in Nordic countries'*

Summary – Many factors combine to make the development of long-term coherent planning, for expansion and increased investment into the entire forestry and timber processing sector in Australia, of increasing urgency, relevance and importance.

Added to the previous issues of import replacement and earning of export income as a source of domestic timber products and wood fibre products, a source of significant regional jobs, and of expert management of forests and water catchments, are the relatively new issues of increased importance of carbon sequestration in wood products, and production of energy (including heat and transport fuels) from forestry and timber industry processing residues from all levels, plus from wood products and wood fibre products at end of use.

The opportunity to develop the bioenergy technologies and policies relating to these to capture the benefits of both these latter aspects should not be allowed to be blocked by ill-informed

ideological viewpoints – though a high level of compliance with guidelines or regulations relating to sustainable management of forests must be required.

As identified by the Rural Reconstruction Commission in 1944, the maintenance and development of Australia's forests and forest products supply was then clearly an issue of national resource security. This is still the case, but the products, in addition to logs and milled timber, also now include potential for massive carbon sequestration in forest and reforested lands, and the energy, biofuels, and substitutes for petrochemicals (that can be derived from cellulose and lignin produced from Australia's forests and plantations, including from this reforested land).

One area that is regularly overlooked in policy development in Australia is the opportunity for significant replanting of multi-purpose forestry on farms. The model advocated for this is as well sited and designed wide windbreaks of suitable species. In some cases these may be more with a diverse mix closer to the preferred landcare planting approach and possibly including some understory species, in other cases the planting may be largely or entirely as a monoculture.

. About 100 million ha of the more productive areas of Australia has been cleared (and usually comprehensively over-cleared) since 1788, and up to 10 million ha of this could be replanted to farm forestry on the lines of this preferred model, at relatively low cost, to produce a range of wood and non-wood products, plus generate significant ongoing employment in rural and regional economies, and provide an addition source of income to farmers.

1. What should the vision be for the forest products sector in the coming decades?

The first report by the Rural Reconstruction Commission in January 1944 to the Hon. Ben Chifley, Minister of Post-war Reconstruction, contained the following paragraph, 'An enlightened and progressive forest policy is now an imperative necessity. It will not be achieved without awakening a national forest consciousness coupled with a realisation of the necessary relationship between forest husbandry on the one hand and the welfare of the timber industry on the other. A large expansion of the timber industry could accrue from such a development. For this both well trained officers and other forest workers will be necessary. The scheme will involve heavy expenditure in developing effective fire control, proper forest husbandry, and wood technology...' The underlining was in the original document. This submission holds that this same advice is still true, and while we are not in a state of war, we need a greatly improved vision for forestry for reasons arguably for much the same reasons – because it is a matter of national security – both of resources and of energy.

2. What specific objectives should underpin this vision?

- To improve national resource security – including by development of the forest and timber processing industry, including for biofuels and biochemical production based on or derived from forest products

- To replace imported wood and woodfibre products with products produced onshore by Australian workers
- To use multi-purpose farm forestry to mitigate risks of climate change to agricultural production
- To sequester greatly increased amounts of atmospheric carbon
- To maintain Australia native forests in as good condition as possible – particularly in relation to minimising impacts of fire and of climate change. This will require mapping, planning, and the developing of an adequate workforce of skilled technicians and people with real on-ground expertise

3. What forest products does Australia have a local and/or international advantage in producing?

Sequestered atmospheric carbon, energy dense products including charcoal, black pellets and pyrolysis oil, advanced biofuels and biochemical. We could market appearance timbers from hardwood species internationally, though possibly more as ply-faced or composite products (engineered flooring) than as solid wood products.

4. What is the potential demand for forest products in the coming decades?

With increasing preparedness by industrialised countries to offset their GHG emissions and to convert towards a far greater use of non-fossil energy sources , and of use of crude oil for chemical and plastics production, Australia could play a supply role of bioproducts including biochemical and biofuel feedstocks produced from wood. Its supply of wood and engineered wood products into the growing middle class of Asia should continue as another area of development.

5. How can Australia best position itself for this demand, both nationally and internationally?

The forest and timber industry has been subject over the last 30-40 years to a succession of changes of policy, a steady reduction in funding to CSIRO programs (along with reduction or cessation of funding to Land and Water Australia, Plantations 2020, and the Plantation Development Committees), a long-running well-funded campaign by ‘green groups’ to completely close down the native forest sector, and the responsibility for the federal management for forests being a minor part of the work of other departments.

Now all this has to be put into reverse, forestry must be more well-resourced and forestry has to be acknowledged as being part of the solution in reducing Australia’s GHG emissions, by helping reduce our heavy reliance on coal and oil. The models for how this can be done can be found in many other countries, with some of them utilizing Australian forest species to do it. The countries include Sweden, Finland, Austria, and countries with

a great amount of eucalypt and some acacia and casurina plantings include Brazil, Argentina, Uruguay and Paraguay, China, Thailand, and South Africa.

In effect the solution is best achieved by allowing the forests to be managed by the people who will benefit from doing this well over successive harvest rotations. The role of government should be to establish the regulatory framework and then step back. Within this process the mistakes of the past, including of the MIS scheme, must be learned from.

6. What drivers or disruptions can potentially affect supply and/or demand?

The acceleration of global warming at higher rates than forecast (or even at the high end of rates forecast – 4 degrees of warming by 2100 for example) will change the situation dramatically. At present in Australia most policy makers are developing national policy assuming no significant warming trend and no significant change to agriculture or forestry in general, and so no major changes to rainfall, growing seasons, yields, incidence of fire, or entire growing areas where the main species are no longer able to survive.

But this is what has happened with lodge pole pine, and possibly to some other coniferous species, in the northern parts of the western side of North America. In Australia a number of premium eucalyptus species are liable to be increasingly under stress if average temperatures continue to rise. Widespread ‘crashing’ of *E.globulus* plantations in NE Victoria in the past decade provide another example. Other impacts may be due to incidence of threats to production or growth of replacement generations of forests due to such plagues as guava rust or phytophthora.

So apart from disease outbreaks, or the loss of important commercial species due to warming, other threats to supply include the present ‘green’ lobbying against use of native forest timbers, or simply of major wildfires hitting the most productive of our forest areas – regardless of what the causes of ignition are.

7. Which emerging forest products have the greatest potential for Australia?

It has to be assumed that the relatively low embedded energy of buildings made largely or entirely from wood will increasingly be recognized as being of ever greater importance. Added to this will be the gradual catching up to the best practice standards being demonstrated in Europe, including of passive solar design. It seems inevitable that this will result in a strengthening interest in the products such as CLT or laminated strand board, and in other wood fibre products that might better utilize the low strength and low durability but fast growing species like blue gum or *E.dunnii*, or the range of Eucalypt hybrids developed in Brazil and elsewhere for production of MDF, plywood and paper and paperboard.

An extension on this will be a far greater use of microcellulose in composites (being produced now by UPM in Finland, among other companies), and a far greater development of biochemicals and biofuels derived from cellulose and lignin. In addition to all the wood and wood fibre products will be the development of carbon sequestration products, both in living trees and as stored carbon in wood products. While R&D is progressing in all these areas Australia does have some advantages in available land area (including the over ten million ha potentially available on farm lands), the volumes of wood thinnings and residues that can be accumulated in regions like the Green Triangle, Great Southern region in WA, NE Victoria and the Southern Slopes of NSW, and NE NSW/SE Queensland. To all this must be added the presence of an active R&D and commercial sector working with new wood products. That all being said, business confidence has received serious setbacks from flip-flopping government policies, including over carbon pricing.

8. What are some of the barriers to the development and/or uptake of these emerging forest products for Australia?

Barriers include: bad policy at state and federal level, largely driven by a short-term outlook and a desire to appeal to the city voter, an ill-informed or misinformed public, a loss of expertise out of the industry, and a continuing lack of appetite by the industry players to take what are realistically seen as unacceptably high-risk investments. But at the heart of it the principal barrier is the lack of clear signals to the industry that the government has a strong and clear vision and a set of policies embedded in legislation.

9. What opportunities exist to better utilise wood resources?

In deciding what opportunities there are we could look at the example of Finland, where the forestry cluster (all sectors associated with forestry and timber processing, including consulting and machinery) produces 40% by value of Finland's exports, with timber and wood fibre products making up approximately 10% of exports.

Finland is doing this with a productive land area no more than that of Victoria, with growing periods from 150 down to 100 days, with up to half of the year in snow and ice and extremely short days, and using only three commercial species, one of which is silver birch.

Much of the forested country is swampy in summer and other forest land can be littered with surface rocks the size of Volkswagens. In this country about 10 million ha of forest is owned by individuals and families, with most of this being mapped and under rolling 10 year plans drawn up by employees of forest management associations. This family forestry sector, controlling 60% of the forest area, produces about 80% of domestic roundwood on rotations of 50 to 100 years, often with three thinnings.

Finland is in this position due to a few positive factors:

- Long-term certainty for the forestry industry due to good policy and legislation
- support and encouragement for R&D and investment

- excellent road and rail infrastructure (where rail is set up to carry much of the long distance cartage of roundwood, including that for energy production)
- close links between industry, local government, R&D and national government
- grower associations being self-governing and largely self-funding – so the forestry management associations’ employees are employed by the growers, answerable to the growers and responsive to their interests.

By comparison Australia has far shorter rotations, better terrain and climate for harvest and management, a large range of quality species of soft and hardwoods, but far less private ownership and far less innovation in design and manufacturing.

I would suggest that the management of our forests, and the mindset of the bureaucrats who develop forestry policy, is much more similar to the situation in Russia rather than in Finland.

Our opportunities to better manage our forests and utilise our wood resource will require a major change in forest management policy and include a divestment of control by the centralized government agencies which have inadequate knowledge or understanding of forestry science and practice, and which have a poor track record of management federally and in most states over the last half century.

10. What is required to ensure the plantation estate is able to meet future demand for forest products (*I'd suggest this should read '...to meet its share of future demand...'.*

Investment in plantation establishment and proper management relies on the industry and forestry investors getting clear market signals about the long term future and profitability of forestry, including of plantation forestry. It is clear that the market signals are not clear and reliable enough to maintain investment. This includes for the farm forestry sector.

The dramatic reduction in the areas planted to blue-gum within MIS schemes after the first rotation, and the fall-off in new pine plantation establishment illustrates this.

Developments in CLT, in biomass to energy and in other aspects like putting a significant price on sequestered carbon would act as some of the necessary market signals.

11. As for comments for point 10

12. Farm forestry in Victoria could be expanded from its present 25,000 (if the 2nd rotation of MIS and leased bluegum plantings are not included) to 500,000 by 2040. This equates to about 5% of land cover of cleared arable land as multi-purpose wide shelter belts, as is already the practice on many farms.

The production from private native forest could be managed in a far more effective way, with resulting timber flows without impact on biodiversity or other environmental values. Indigenous owned and managed lands need not be separated out and generally would fall into one or other of the existing forestry regimes.

13. the future research needs include

- Work on low rainfall species including on harvesting of biomass and other products
- Work on the genetics of farm forestry species to establish best genetics for character of growth rate, form, self pruning and other timber qualities
- Lab work to identify flammability ratings of native timbers
- Wood technology work on glueing, microwave drying, milling of small diameter roundwood
- Research work on the many aspects of making wood products more effective for use in buildings including in Australian CLT options or other thick wall material made from long wood fibre.

Looking at Brazil, the imported eucalypt species after 1975 have been turned into a range of clonal hybrids of far greater growth rates that are developed to suit different rotation lengths, different products, different soils and rainfall zones. In that same time period development of hybrids or other R&D in Australia of increasing productivity from eucalypts has been far less in this area. The saga of oil mallee biomass in WA and the development of one machine for harvesting this is a classic example of disconnection between funding, research and the commercial objective.

14. The inhibitors are lack of market signals to the industry in general and lack of funding of inadequacy of funding for more pure areas of research. For near commercial areas of research the development of commercial investment similarly requires investors to have confidence in policy development and reliable long term strategies backed by legislation – none of which is there at present.

15. By taking it away from variable politically-influenced government funding, and using some other models that may be found in countries where forestry is a significant part of the national economy.

16. To engage domestic and international consumers would appear to require two different but possibly overlapping strategies. For domestic consumers a well-funded and well designed campaign as done by FWPA may be adequate but it needs to have active support of ENGOs that presently are silent or oppositional. For the international market Australia at present does not have a high profile as anything other than an exporter of chip and pulp for paper making, and of logs. This could be changed but the primary scope is to develop the domestic market.

17. Most important, but rendered less effective by any opposition of confusion coming from counter-campaigns (i.e., Markets for Change and Getup! Campaigns against plywood from Tasmania, or to furniture from native forest timber in Harvey Norman stores).
18. the striving by FSC to position itself as the timber certification organisation that has the monopoly position is most unfortunate. It now is branding its Australian certification with an acronym far too similar to AFS. This is another aspect of the counter campaigns by the 'green' alliance that is over-ready to use emotionalism and misleading information to continue to confuse the Australian public.
19. development of more organized Forestry hubs could be a great move in that as well as developing solutions appropriate to the region, they can do advocacy and promotion specific to the region. Some models of regional forestry hubs can be found in Nordic countries, and other variants of this in Germany and Austria. In Austria much smaller commercial centres with similarities to the Hub idea play an important role in supply of timber, firewood, and biomass, and may also deal in carbon, wood pellets and forestry management consumable items.
20. The barriers are again the lack of strong market signals and lack of confidence in the reliability of real long term coherent planning by federal and state governments. Examples of the negative impacts of this in action include the removal of support from agencies like the 19 Private Forestry Development Committees that existed around the country, removal of funding from Land and Water Australia and so JVAP, reduction of funding to RIRDC and CSIRO forestry sections. Flow-on impacts are on state farm forestry networks, and the lack of any scope for farm forestry over some years of Caring for our Country funding. These are mostly cases of ill-constructed ideologies and 'ivory-tower thinking' being allowed to damage longer-term positive outcomes and prospects.
21. More work needs to be done on how best to develop forestry hubs, and most particularly how to make any management of them self-funding so they will not fall victim to the next round of financial cuts or some government or pressure group-led anti-forestry ideology.
22. Development of rail infrastructure (including loading sidings) to allow far more flexible use of rail for transport of roundwood or biomass would only be beneficial. This is particularly of importance in linkages to deep water ports (i.e., Portland in Victoria).
23. This has to be a whole of government bi-partisan issue, that focuses on Australia's needs for an effective transport system that will allow both industry and populations at some distance from the major ports and urban centres to be competitive, productive and retain a significant and flourishing population. It is an issue that forestry is only one part of.

24. Production of forestry graduates is on the decline in most OECD countries (around 2003 Norway was seeing a similar decline to that of Australia in forestry U/G enrollments). Training centres for people working on the newest harvesting machinery or for larger and smaller scale milling are of critical importance for maintaining and developing a 'new' forestry industry into the next 25 years. The precarious situation in Victoria of the Creswick forestry school and the Timber Industry Training Centre are just examples of the current situation. Their equivalents in most central European countries would presently be fully utilized.
25. No. At present it appears that the training providers are underfunded, generally struggle to make ends meet, and have an uncertain future. Proper funding in these is an investment in Australia's future – even though that sounds corny. It is what is done in the countries that can be viewed as leaders in utilisation and value-adding of what is by contrast an inferior resource to the products from Australia's forestry species.