

Forestry Investment Outlook 2023-2028

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Introduction

New Forests has previously published comprehensive reviews of the outlook for institutional forestry investments¹. In those outlooks the key themes included the steady shift of wood supply from harvesting extensive natural forests to intensive timber plantations, the rise of Asian timber and wood fibre demand, the new opportunities for the forestry sector in a circular bio-economy transition, the rise of sustainability and climate mitigation opportunities and the rising importance of investment capital in the evolution of forestry and land use.

This paper takes a refreshed view of the key trends influencing forestry investment and the forestry sector more broadly. There have been significant shifts in geopolitics, supply chains, the Covid-19 pandemic, a Russian invasion of Ukraine and intensification of global efforts to address the twin challenges of climate change and biodiversity loss. These issues translate into both an acceleration of previous trends as well as new opportunities and risks for investors in sustainable forestry and broader land use.

This forestry investment outlook is a shorter form than previous versions and seeks to consolidate a view, at this moment in time, on how the forestry asset class is evolving and what the implications are for investors over the next few years.

Trade, Supply Chains and Geopolitics

Markets for forest products are complex, and there is a myriad of supply chains for roundwood, wood fibre, wood products and energy products. Both supply and demand are dispersed around the world. Markets have various cycles driven by economic conditions, housing demand, technological changes and public policy settings. The capture of profit margins is also in continuous flux among feedstock suppliers, logistics providers, and manufacturers. Unprocessed wood can be shifted between markets depending on relative prices. Due to these multiple variables, it is difficult to develop an overall econometric model that can accurately predict forest product market prices. Investors are well-advised to create diversified portfolios of forestry and land assets to reduce excessive volatility in their returns.

Since the global financial crisis of 2008-2009, forestry supply chains have been globalising to accommodate rising demand from Asia. This has particularly benefitted Australian, New Zealand, Russian, European and Latin American suppliers of raw logs, woodchips, market pulp and sawtimber. In North America the slow but steady recovery in housing starts had been tightening the supply and demand balance until the recent rise of inflation above target levels. With timber harvest in Canada declining, and the US West timber supply fully allocated, growth in wood processing has been centred on the US South to balance demand. As the world entered the Covid-19 pandemic market conditions were becoming tight in many regions. The pandemic disrupted supply chains, causing spikes in lumber prices in the US, log prices in China, and most recently pulp and woodchip prices in the Asia Pacific. The impacts of the Russian invasion of Ukraine have tripled the price of wood pellets for energy, and disrupted trade between Russia, Europe, and China.

What this shows is that supply chains adjust slowly, repositioning wood from areas of oversupply to areas of higher demand, and wood processing investments to areas of higher wood supply availability. Where demand outstrips the ability for supply chains to adjust, the market tightens quickly and prices can spike, as was seen in the US lumber prices over 2020-21. It was interesting to note that in the US South, where there has been a long-term build up in

¹ See www.newforests.com for previous editions of our outlook series.

standing timber, this did not translate into substantial log price increases, and most of the profits went to manufacturers. In the case of New Zealand log exports to China, the profit margins were captured by the shipping industry, which benefitted from logistical challenges and port congestion. With the current peak market conditions for wood fibre in the Asia-Pacific, Australian Eucalyptus plantation owners are seeing record stumpage prices, up 15% year-on-year. In this case the availability of underlying wood supply is the limiting factor. Investors conducting due diligence should seek to understand these dynamics. In some cases, investments that integrate forestry with logistics, infrastructure and/or timber processing facilities can perform much better than the segregated ownership of the forest alone if the profits are largely being secured in these other parts of the supply chain.

Forestry markets are less volatile when there is free trade, well established and flexible supply chains and reasonably steady or at least slowly evolving conditions in the sources of supply and demand. It would be hard today to argue that the next five years will see these kinds of relatively benign conditions. It now appears that international trade peaked in 2018 and many countries are actively pursuing policies to localise supply of critical raw materials. The geopolitical situation between China and the West has been increasingly tense in recent years, and the Russian invasion of Ukraine was a surprise disruption to markets for energy, food and other natural resources. It is likely that timber prices will remain volatile in the coming years. As noted above, diversification in market exposures both geographically and by end-product, will be the best way to manage volatility as forestry markets are not well correlated.

For the investor it is not enough to understand the timber markets, but also to consider the supply of well-priced assets. The 2000s was the decade of US forestry rationalisation, and the 2010s was the decade of Australia New Zealand rationalisation. What will the 2020s bring? It seems like there is a roll-over of assets initially acquired in the 2000s occurring in the US, and Australia and New Zealand have a high carbon price which is spurring greenfield forestry along with some continuing asset turnover. A few managers have established businesses investing in European forestry assets, and there are also small funds seeking to identify emerging market opportunities in Latin America, Asia and Africa. Alongside this has been a proliferation of nature-based carbon project platforms, developers and financiers. Most of the traditional forestry investment managers have launched some form of climate or carbon focussed investment strategy to harness the role of sustainable forestry as a climate solution. If the world moves seriously to decarbonisation, then the economics of forestry and land use are likely to change dramatically, as has already been seen in New Zealand where the USD 50 per tonne carbon value exceeds the timber stumpage value in many areas.

The Rise of Climate Change and Conservation Finance

Since the Paris Agreement of 2015, there has been a concerted effort to transition the global economy away from fossil fuels and towards the goal of keeping global warming well below 2 degrees Celsius, and preferably to 1.5 degrees Celsius. Sustainable forestry is a solution to climate change both in terms of the potential of forestry assets to absorb and store carbon dioxide from the atmosphere, but also to provide low embodied energy and low emission substitutes for higher emitting materials (see bio-economy discussion below). The recognition of the role of forestry and land use in reaching net zero emissions has increased since the Paris Agreement. Some researchers have suggested that up to one quarter of the decarbonisation process will come from forest conservation, reforestation and restoration of degraded ecosystems, and sustainable forestry and agriculture. That represents 10 billion tonnes of emission reductions and carbon removals per annum.

To encourage land-based carbon sequestration and storage, multiple government-regulated and voluntary carbon markets have been implemented over the past decade. These markets allow forest owners who protect forests, increase carbon storage in managed forests or reforest new areas to create tradable emission reduction certificates or units. Where these carbon offsets or credits are low-priced, say less than USD 10 per tonne of carbon dioxide, it causes little implication for forestry investment returns. But where prices reach USD 20 to USD 50 per tonne, as they have in the government regulated forestry offset markets of California, Australia and New Zealand it can have significant implications for the economics of land use.

Given that the rules are different across these regulatory regimes, the outcomes vary. In California, as the carbon price rises, more and more stands are shifting to longer timber rotations, or from timber production to conservation. In Australia and New Zealand, the rules promote reforestation of marginal grazing land, and switching from short rotation Eucalyptus plantations to longer rotation pine plantations. In New Zealand particularly, where the carbon offset price is reaching USD 50 per tonne, some investors are planting marginal agriculture land with pine plantations that they have no intention to ever harvest².

As these carbon price signals expand and increase in value it will have implications for forestry asset valuation and asset management strategy. For example, landowners in New Zealand which have the option to reforest their land and participate in the New Zealand emissions trading regime have seen underlying land values for grazing land rise from NZD 4,000 per hectare to almost NZD 20,000 per hectare as the carbon option value is capitalised into land value. This suggests investors should be looking for countries or types of forest or land use where a carbon price is yet to be established or low and buy land or forestry assets with potential upside exposure to carbon price signals in advance of those markets being realized.

Outside these regulated markets are the voluntary carbon markets, which have been expanding rapidly. The total value of voluntary carbon credits traded quadrupled from USD 500 million in 2020 to USD 2 billion in 2021³. Climate mitigation from conservation, ecosystem restoration and sustainable forestry and agriculture, collectively called Nature Based Solutions, have been a premium part of the market. While the market appears to have stabilised in 2022, there have been a host of new business ventures launched to tap into the demand. Carbon offset prices range from USD 4-8 per tonne for avoided deforestation (also called Reducing Emissions from Deforestation and forest Degradation or REDD), to USD 10-20 per tonne for carbon removals in reforestation projects. Much of the opportunity related to voluntary carbon projects has been in tropical emerging markets but there have also been voluntary carbon programs in the US and Canada, for example GreenTrees⁴ in the Mississippi delta and Mosaic⁵ on Vancouver Island have both created voluntary carbon offset programs associated with forestry assets.

Some investors have also undertaken decarbonisation commitments for their portfolios. Forestry carbon accounting systems can cover Scopes 1, 2 and 3 emissions as well as carbon removals providing an annual net accounting of the carbon position of forestry assets. In many cases forestry assets will have a net removal of carbon dioxide, or a negative emissions profile. Accounting for the negative emissions from forestry investments in a portfolio of investments may mitigate some of the harder to reduce emissions from other sectors like transport, materials or energy⁶. As investors seek to address a range of impacts across climate change, biodiversity conservation and social issues, standardising this type of integrated accounting and reporting will become increasingly important.

Climate change is both an opportunity for the forestry sector and a risk. Forestry assets are being exposed to increased physical risk factors. In the last couple of years there have been major hurricane impacts on US forestry plantations in the southeast, increased prevalence of forest fire in the Western US and Canada which has burned hundreds of thousands of hectares, and high intensity rainfall events impacting softwood plantations in New Zealand. Australia has gone from extreme drought and extensive wildfire where millions of hectares of forests were burned, to record rainfall and floods over the past two years. Investment management systems will not only need to increase fire detection and initial attack capability, but also explore innovations like captive insurance vehicles to consolidate and transfer these increased risks.

An Accelerating Bio-Economy Transition

Another trend linked to the decarbonisation of the global economy is the need to transition to a circular bio-economy. Circularity refers to the imperative to move away from the linear process of using natural resources in various products and then disposing of them as waste. A circular economy re-uses, recycles, and re-purposes materials like

² See for example Permanent Forests New Zealand at <https://www.permanentforests.com/>

³ See www.ecosystemmarketplace.com for extensive reporting on the voluntary carbon markets.

⁴ See <https://www.green-trees.com/>

⁵ See <https://www.mosaicforests.com/news-views/bigcoast-forest-climate-initiative>

⁶ See an analysis of how forestry can contribute to an optimum investor portfolio with a net zero goal at <https://www.nuveen.com/global/insights/responsible-investing/trade-offs-between-risk-return-and-net-zero-carbon>

paper recycling, re-use of glass bottles or taking wood waste from demolition sites and using it as feedstock in the production of wood panels. The bio-economy is based on using renewable biomass from forestry and agriculture as the basis for a spectrum of materials in society. Wood, wood fibre, woody biomass and biochemicals can substitute for much of the materials used in society, from concrete and steel in the built environment, polyester fabrics, plastic packaging, fillings, coatings, food additives, and even metals and batteries. This is a tremendous opportunity for the forestry sector, and rapid innovation is occurring across a spectrum of goods and materials.

Studies of the materials needed in a decarbonising economy suggest that by 2050, a net zero world would be consuming 40-fold the annual quantities of cobalt, copper, nickel and lithium⁷. Even full recycling of these materials would only contribute about 17% of supply because of the escalation of demand relative to recycling supply. To most analysts this is an infeasible level of expansion of supply of these scarce metals and minerals. This points to the relentless need to find ways to substitute for these critical minerals with refined biomass-based materials and bio-chemicals. Looking at the most advanced efforts to implement the circular bio-economy, for example in Scandinavia, there is likely to be a rise of bio-refineries and wood processing ecosystems that produce core building materials, engineered wood products, wood fibre-based products and bio-chemicals and energy. This in turn will lead to biomass production baskets, with large-scale, relatively homogenous feedstock supplies, likely based on intensively managed timber plantations.

A continuing transition from natural forests to plantations as the source of wood supply

The combined factors of a rising demand for wood, an increasingly persistent and pervasive carbon price signal and the efficiency of plantation production systems will inexorably lead to a transition in wood supply. The economics will increasingly push natural and semi-natural forests into conservation and low intensity harvesting, while carbon prices reward the expansion of plantation forestry systems onto degraded or marginal agriculture land, especially in the southern hemisphere and tropics. The demographics of the 21st century suggest that the recent rise of China as a source of timber demand will be succeeded by the rise of India over the next 10-15 years, and then ultimately by the rise of populations in Africa after mid-century. For investors, the long game is in gaining exposure to high quality forestry plantations serving the rising demand for a circular bio-economy and urbanisation of the Indo-Pacific region.

While there has been criticism of monoculture plantations, there is also a recognition that a world of 10 billion people with a Gross World Product potentially reaching USD 300 trillion per annum by late this century will only work with significant intensification of production on a proportion of the land base. The end-game needs to be balanced, stable landscapes that incorporate substantial biodiversity conservation, and sustainable intensive agriculture and forestry systems. The landscape context is important as well for adaptation—allowing migration of species, gene flow and broader regulation of physical and climatic factors like floods, droughts, wildfire, windstorms and the recharge of ground water tables. Investments to create these sustainable landscapes will increasingly integrate real asset investments such as land, forestry and agriculture, as well as conservation finance, climate finance and social impact investment.

The rise of analytics

As the world wrestles with a transition to sustainability, competition among various land uses will intensify. Timber, agricultural commodities, carbon and biodiversity credits, water rights, windfarms, solar farms and urban development will all need to be accommodated in an optimal fashion. Sophisticated geospatial and temporal optimisation modelling will be used to examine land allocation at an ever more granular scale. What becomes the investment thesis for investors?

In some ways the future of investing in rural land is becoming analogous to investing in types of infrastructure like airports, where multiple forms of option value like parking lots and shopping malls were used to increase asset value and income. In land use, however, these forms of option value are harder to optimise because they often compete

⁷ See Pitron, G. 2020. The rare metals war. Scribe. Australia.

in the landscape and have dynamic, uncorrelated market price signals. There will also be a regulatory overlay as well as strong investor demand to ensure that key values like biodiversity, water quality and soil conservation are prioritised.

New Forests has explored ways to create heat maps that show, for example, areas of farms with lower net primary productivity, which might be candidates for reforestation, or heat maps of unrealised climate mitigation potential in certain forests. Overlaying multiple data layers for water yield, groundwater recharge and seepage sites, crop productivity, proximity to ports, wind profile, and biodiversity value can help assess what values to apportion where, and where to allocate capital investment. As these values are dynamic, shifts in land use may also occur over time. These new modelling tools will not only promote sustainability but should also increase returns and unlock unrealised option value over time. Designed well, these investment strategies should also create more rural economic benefits, improved quality of life and stable rural communities.

Innovations in Finance

As sustainability becomes central to land management new innovations in finance and investment structures will also proliferate. New Forests has established a blended finance structure in our current Southeast Asian forestry fund⁸. Impact investment capital is blended with core forestry investment capital to create a portfolio of investments which can integrate high sustainability elements related to climate change mitigation and adaptation, biodiversity conservation and community development benefits. The two investor classes invest together, but the waterfall of returns is segregated to provide a higher return to the core commercial investors.

New Forests' recent launch of the African Forestry Impact Platform with British International Investment (BII), Norfund and Finnfund is another example⁹. As an open-ended fund, it can help create and perpetuate sustainable landscapes that deliver production, conservation and community benefits. The investment vehicle is dubbed a platform because it can house a core forestry investment fund, an impact investment vehicle and could act as an implementation partner for third parties seeking conservation, restoration or climate mitigation investments.

New Forests' fourth round Australia & New Zealand fund allows capital to be allocated across forestry, agriculture, bio-economy processing opportunities and carbon or biodiversity projects. In our US-based business, our current fund identifies unrealised carbon market opportunities across the forest landscape and effectively re-segments a maturing asset class to extract higher returns from optimising carbon and timber values. These examples point the way to a future where the forestry asset class expands and morphs into a much more analytics-driven and solutions-driven investment strategy. We expect this will be of benefit both to investors and to the planet.

A final note

In this outlook, we have covered the key trends that we see informing investment strategies in the forestry asset class in the coming years. In summary, we expect more volatility in markets, rising exposure of forestry and land use more broadly to environment markets especially in carbon, much more complex analytical approaches to extract value from assets and a continuing search for diversification and mispriced assets. New Forests welcomes your feedback and comments on the ideas in this paper.

⁸ See <https://newforests.com/new-forests-announces-first-close-of-tropical-asia-forest-fund-2-raising-us120-million-2/>

⁹ See <https://newforests.com/new-forests-announces-first-investors-in-african-forestry-impact-platform-and-inaugural-acquisition/>