Forestry in New Zealand

A case study on New Zealand as a location for forestry investment

For professional investors only.
Capital at risk. Not investment advice.

Gresham House
Specialist investment

Background

New Zealand's land economy is built around agriculture and forestry with each benefiting from the productive soils and diverse geography across the islands.

Plantation forestry contributes over NZ$6.3bn (1.6%) to New Zealand's GDP as well as providing for the wood-product and ultimately construction sectors. The plantation area is mostly radiata pine and a small but significant array of alternative species, including douglas fir, eucalypts, and cypress.

Beyond domestic sectors, these productive species are at the heart of a mature exporting industry, supplying softwood logs, pulp, and lumber into the Asian markets.

The forestry sector in New Zealand also benefits from an established carbon market, providing investors with a potential natural capital income stream based on net emissions sequestered.



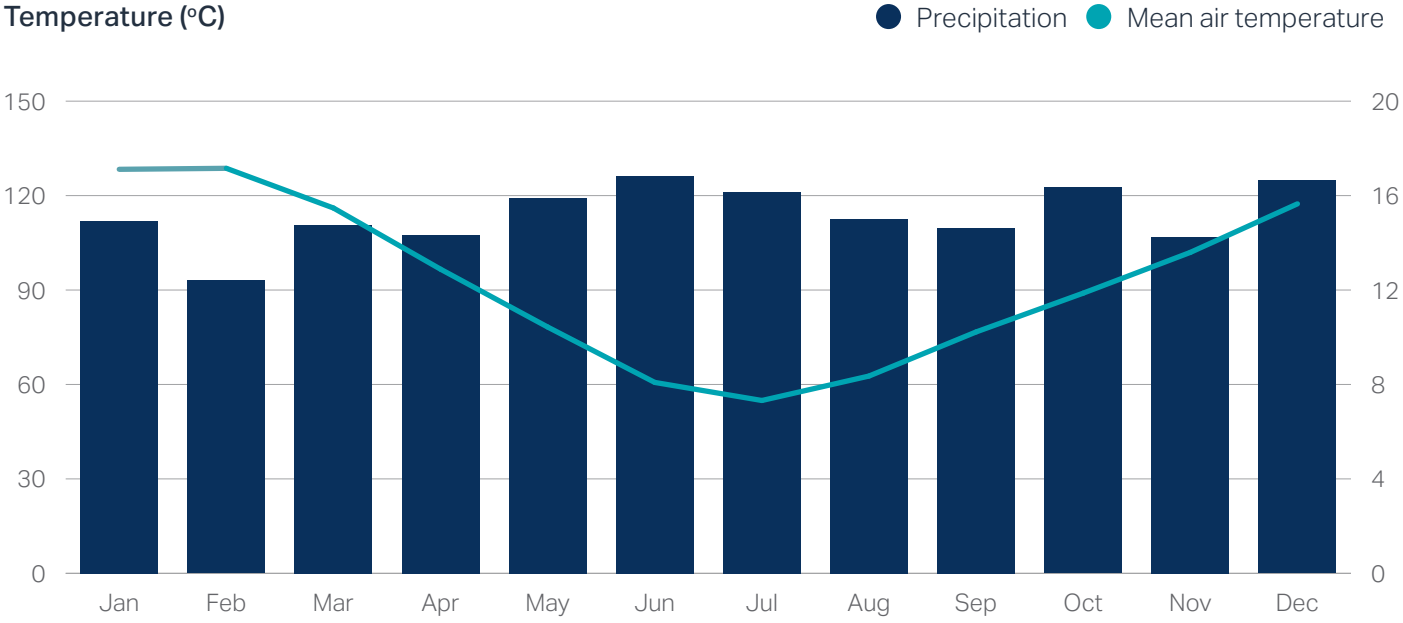
Growing Conditions

While classified as temperate, New Zealand's climate varies along its coastal, mountainous, and flat terrains, within which are regions ideal for productive tree growing.

Large sections of the country benefit from a rainfall dividend tied to its location in the Pacific, as well as receiving an average of over 2,000 hours of sunshine annually.

Historically, plantation forestry has been planted mainly on marginal soils less suitable for traditional cropping and intensive stock farming. However, these soils are still conducive to tree growth, being typically young, and containing the key nutrients to support healthy plant development.

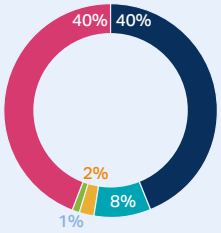
New Zealand climate - Rainfall (mm) vs Air Temperature (°C)



Source: NIWA

Approximately half the land area of New Zealand is dedicated to arable crops and pasture, and slightly over a third is forest cover, of which only 8% is managed as commercial forestry.

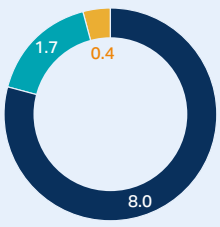
Taken together therefore, approximately 60% of the total land area is productive. As a result, the country can comfortably produce more than it consumes, providing export opportunities for a variety of commodities.



Land use in NZ

- Exotic grass land
- Forestry
- Cropping and horticulture
- Urban
- Native land cover

Source: Stats Gov, NZ



Forest cover (mn Ha)

- Native forestry
- Productive plantation
- Unproductive plantation

Source: NIWA, NZ

New Zealand forestry - history

Indigenous forests

The majority of New Zealand's forest cover is indigenous and managed by the state for conservation of biodiversity, heritage, and recreation. The prominent species present include southern hemisphere beech and podocarps which have adapted to the soils in New Zealand.

Productive forestry

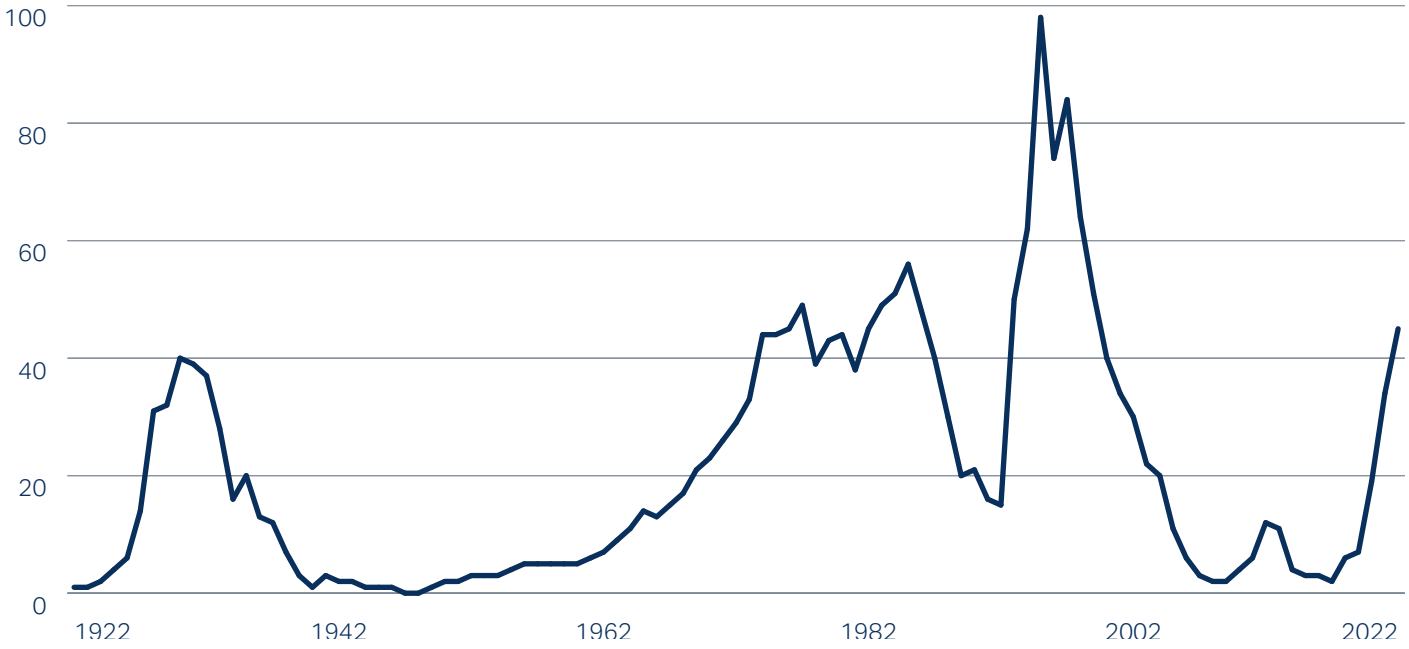
Native forest cover originally provided resources for indigenous and settler communities to develop, but the modern focus in New Zealand's productive forestry has shifted to newly established varieties. As documented by the Institute of Forestry, commercial forestry in New Zealand has experienced three 'booms' since the start of the last century. As plantation forestry expanded, the pressure on native forestry has lessened, allowing the conservation of significant areas.

The first significant planting effort occurred in the 1910's in step with many nations around the world seeking to establish a strategic reserve of timber. These deliberate planting programmes focused on what was perceived to be the most productive species - such as radiata pine from North America.

A second boom emerged in the 1960's when timber was recognised as a profitable export opportunity that New Zealand could avail of.

The third boom occurred in the 1990's, during which period the investment appeal of forestry gained further currency, particularly for long-term liability matching and retirement planning. While this expansion was underway, as much as 98,000ha was planted in a single year (1994).

New Zealand's afforestation - New Ha Planted (000's)



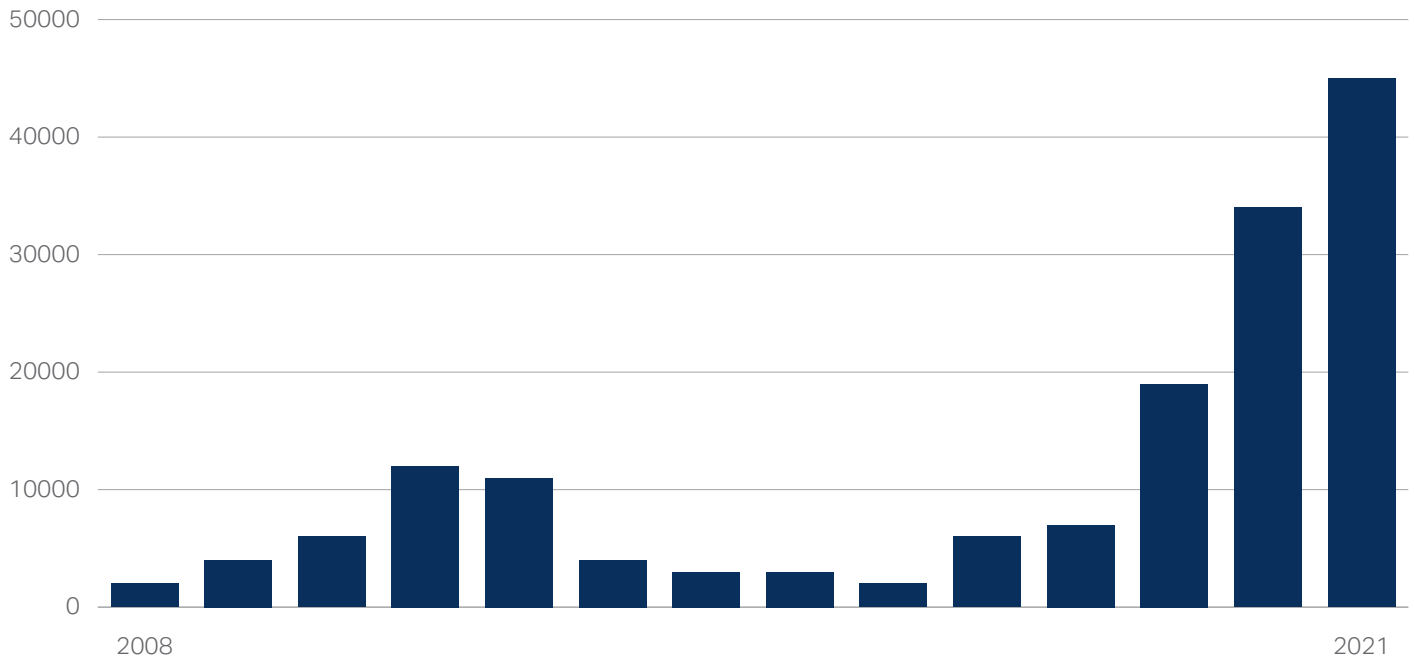
Source: New Zealand Forest Service, Ministry for Primary Industries

Current state

Radiata pine has continued as the preferred species for commercially planted trees in New Zealand, comprising over 90% of the total. A low impact silvicultural regime with minimal thinning or pruning is becoming the preferred standard, partly driven by higher labour costs as well as maximising carbon sequestration. The target end product in conjunction with significant genetic improvement has also driven silvicultural decisions, with the rise of engineered wood products shifting the focus away from pruned stems with limited knots to a preference in key markets for volume.

In the decade following the global financial crisis, plantation establishment had remained relatively muted. This trend has shifted in the years since 2019 with what may possibly be the fourth planting boom now underway. This is driven partly by opportunities in carbon credits, with increased returns to traditional forestry and a new category of profitable permanent forestry developing.

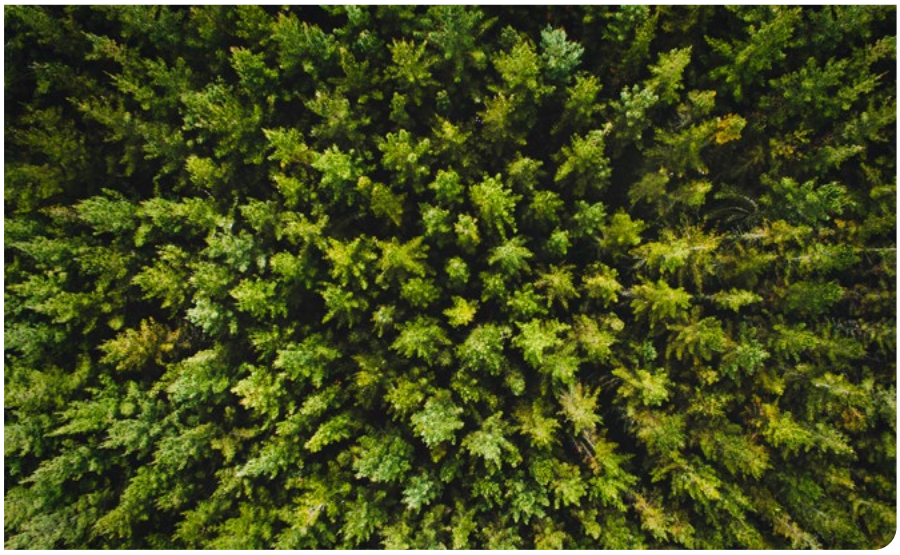
Recent forestry establishment (Ha) - New Ha Planted



Source: National Exotic Forest Description 2022





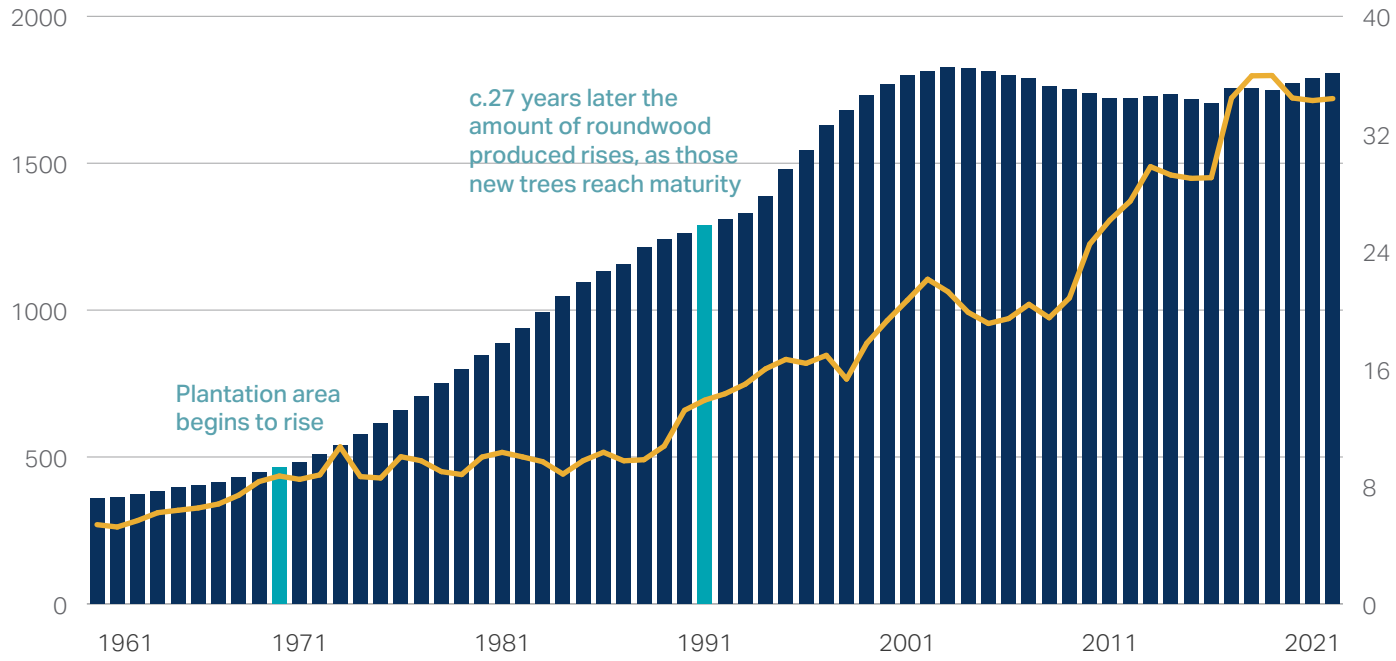


Wall of wood

The planting of new forests naturally results in an increasing amount of maturing timber, with a time lag while the trees grow to maturity. The gap between planting and delivering timber to the market varies by species and geography, with the New Zealand radiata plantations typically entering the productive phase 27-30 years after planting.

The below graph provides a rough illustration of this trend. The blue bar shows how the area of productive forestry has risen, whereas the orange line shows that while roundwood production has risen, there is a lag between the two while those newly planted crops grow to maturity.

Productive forest area and roundwood produced - Ha (000's) vs Rounwood Produced (million m³)



Source: FAO

The significant planting in the 1990s is now reaching maturity with the industry preparing for roundwood volumes to rise significantly. This is likely to be particularly acute in the Northland and East Coast regions where most of the increased supply is due.

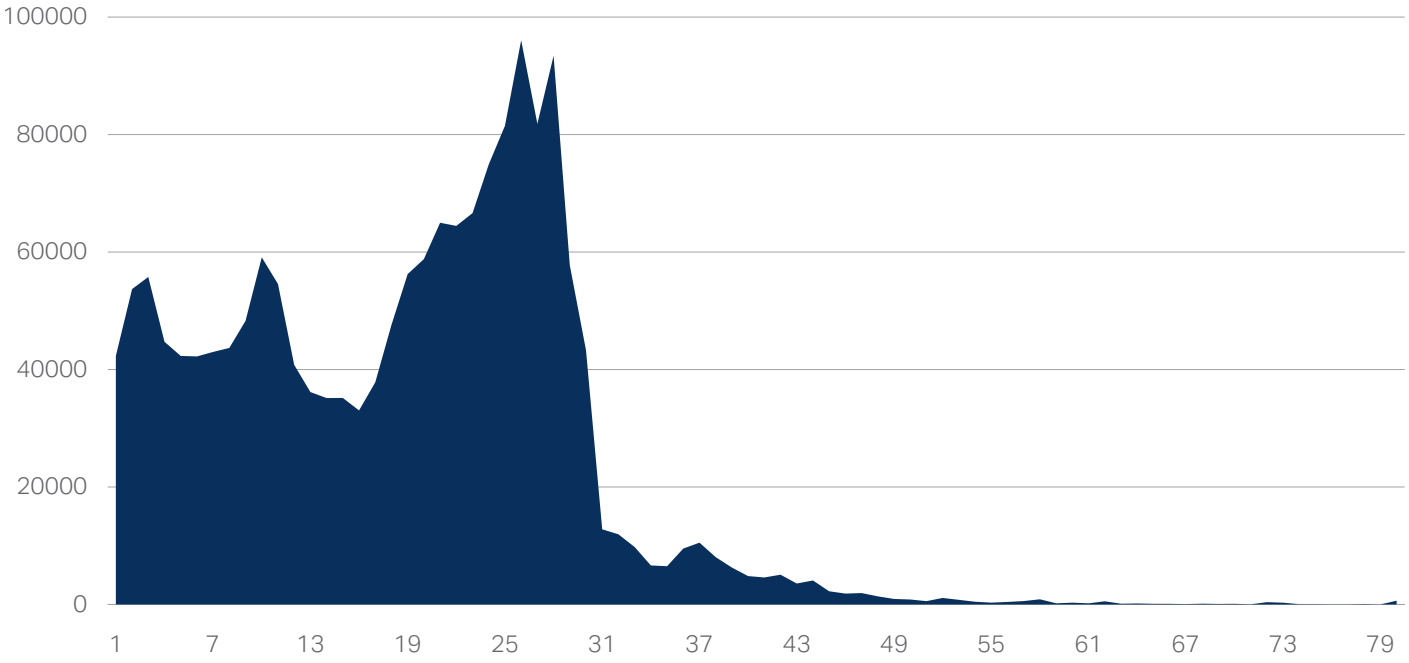
Export infrastructure operators, such as ports and distribution networks, have reported preparations for the higher volumes including additional wharves and investments in improved technology. Similarly, the wider harvesting and wood processing industry has sought to increase the skilled workforce necessary. Nonetheless, it is expected that demand for labour and equipment may drive a premium on that available. During historic periods of log supply expansion, the share of logs exported has typically risen, with the milling industry tending towards a risk averse approach to infrastructure investment.

In a recent Margules Groome report produced for the Ministry of Primary Industries, the total recoverable volume - a measure for the forestry that is reaching the optimal time to fell – is forecast to reach 40 million m³ in 2024, before falling to a brief low of 25 million m³ in 2034, and then levelling out at approximately 32.5 million m³.

However, Scion Research, a New Zealand government-owned research institute, notes that while significant volumes are likely to enter their maturing phase, there is still significant flexibility around harvesting.

This flexibility allows timing with market demand to avail of favourable prices and avoid oversupply. This results in a natural smoothing of peak output in the current and future rotations. As a result, while the 90's planting appears particularly lumpy now, that will naturally even out in later rotations.

Commercial Forest Area by Age (Ha)



Source: Ministry of Primary Industries, NZ

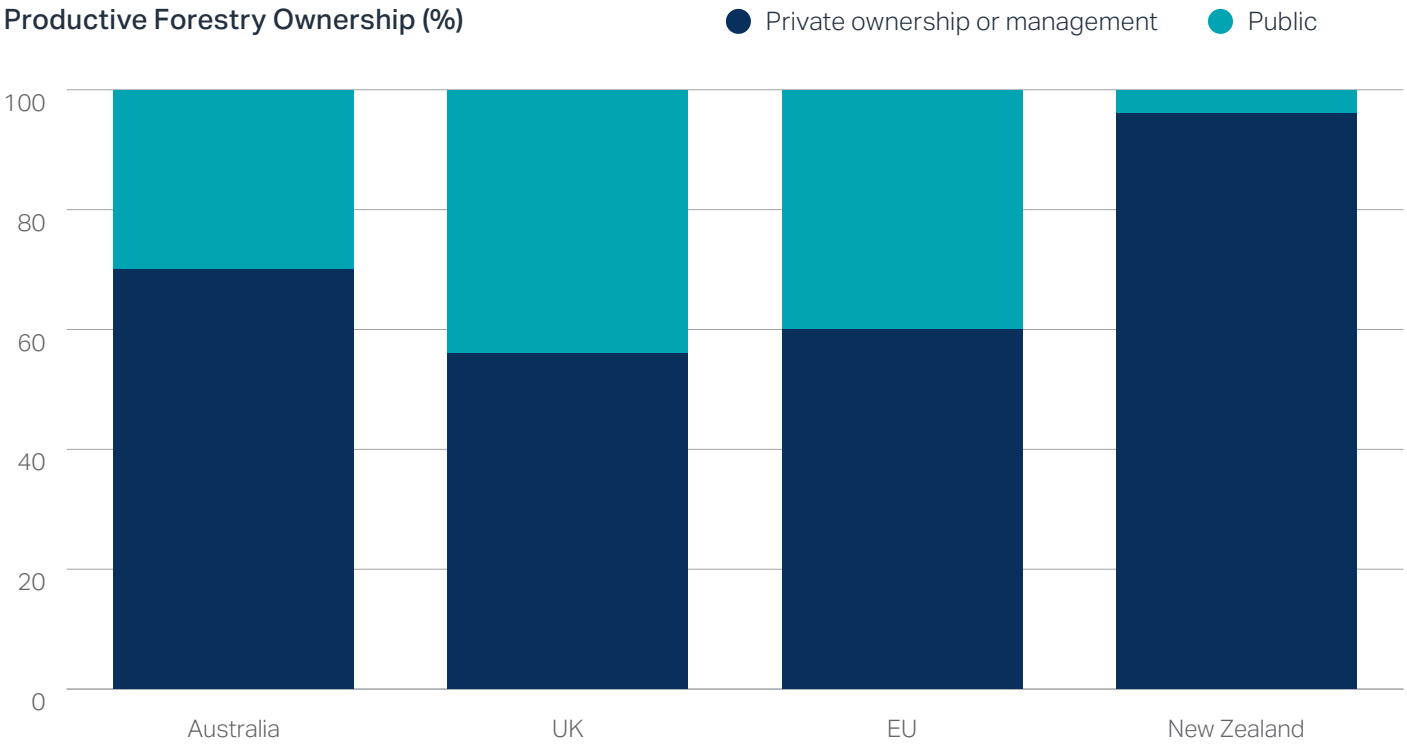


Public and Private Ownership

The forestry market structure within New Zealand is notable for the limited presence of public ownership. This followed a wave of privatisations in the 1990's that brought the state ownership of productive forests down from 60% (1969) to as low as 5% (2014).

Public commercial forestry ownership often meets a number of stakeholder needs beyond profitability – such as managing forests deliberately for recreation and ecosystem services, as well as structuring harvesting to support the domestic milling industry. This latter motive supports wood processing to the ultimate benefit of the sector, though it can sometimes restrain upward movements in timber prices.

Productive Forestry Ownership (%)



Source: DAFF Austalia; Forest Research; European Forest Institute; Ministry of Primary Industries, NZ

Domestic Demand

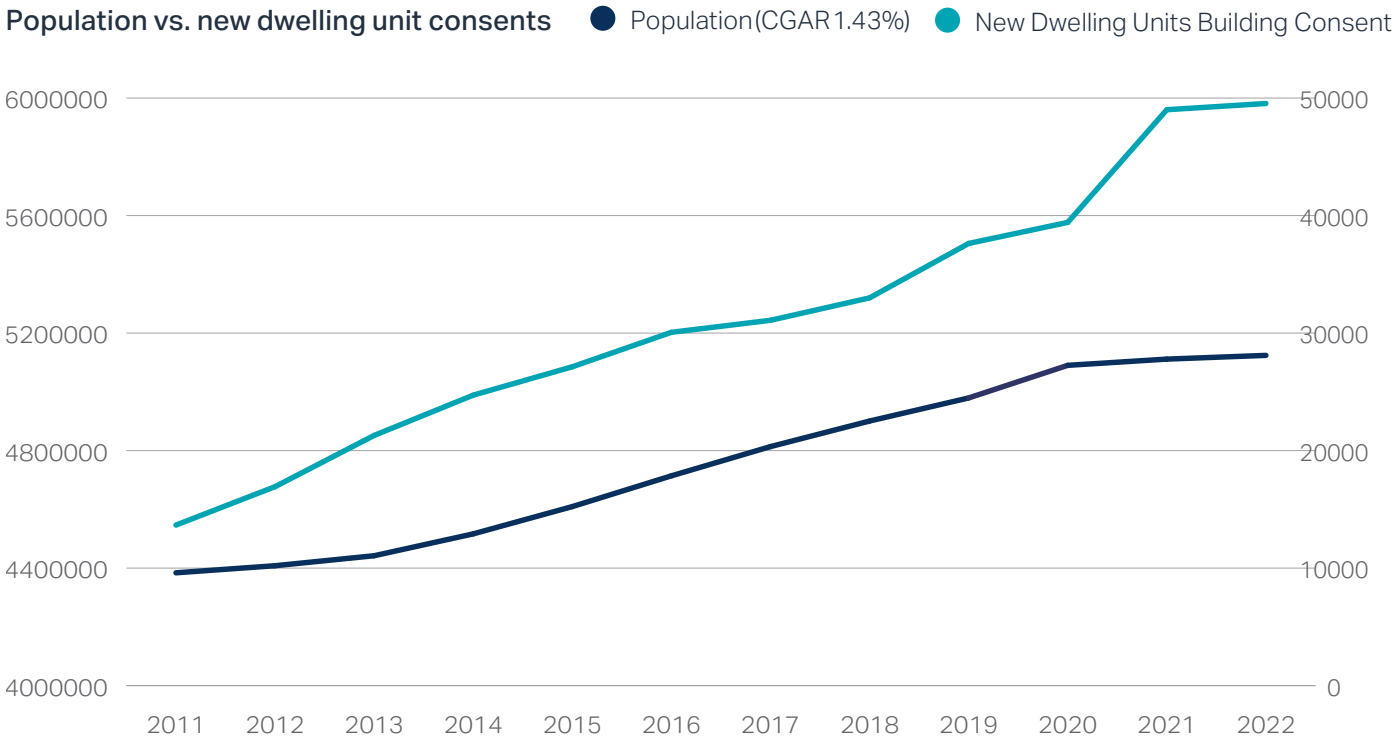
As in most developed countries, the domestic demand for timber is primarily driven by the construction sector.

The highest value segments of this market are structural sawn timber as well as engineered wood products which feature prominently in building design for their combination of longevity, strength, and workability. Timber-based construction of homes has been a long part of New Zealand's history, driven by timber availability and its resistance to earthquakes.

In recent years there has been a boom in new housing construction as well as an uplift in residential property values across the board in New Zealand. The increase in demand for new houses is driven partly by the flow of capital and new residents into the country, as well as the need to address historic undersupply and affordability issues. In recent quarters a flattening of activity has been observed as interest rate rises dampen investment in new housing starts.

Housing availability has long been a political concern, and in March 2021, the New Zealand government took steps to address this issue. This included the establishment of a $3.8 billion Housing Acceleration Fund and a $350 million Residential Development Response Fund. These initiatives were designed to facilitate the construction of more housing units and improve access to affordable homes for the population.

Population vs. new dwelling unit consents



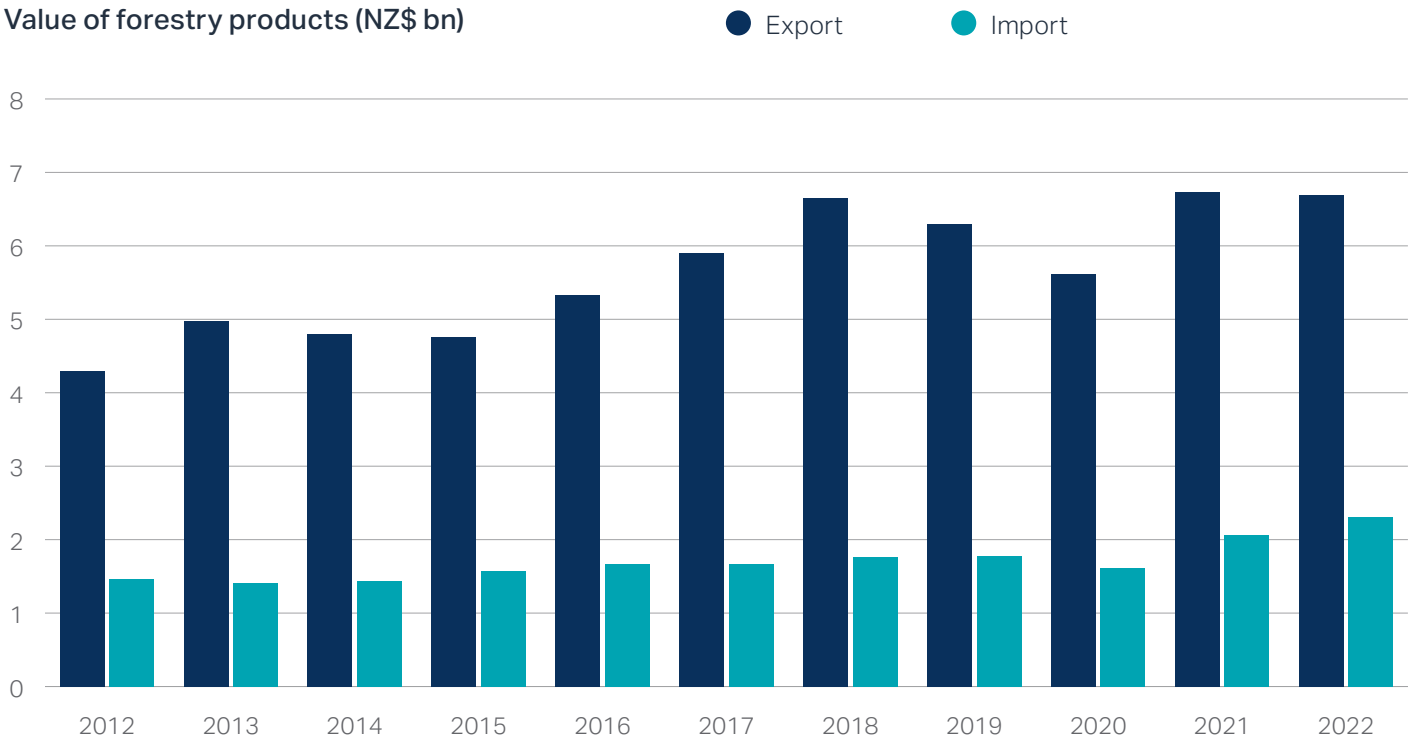
Source: World Bank; Stats Gov, NZ

Export Demand

Forest and wood products in New Zealand are to a large extent export driven, with significant portions of roundwood, sawnwood and other forest products being shipped from the country.

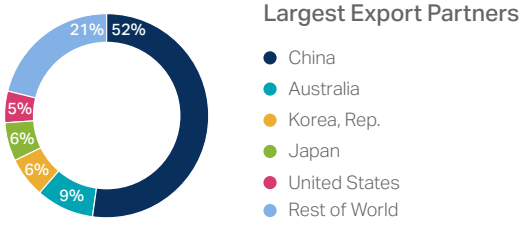
Product	2021 Production (million m^3)	2021 % Exported
Industrial Roundwood	36.0	63%
Sawnwood	4.5	46%
Wood Chips	1.2	42%

Value of forestry products (NZ$ bn)



Source: FAO; Ministry of Primary Industries, NZ

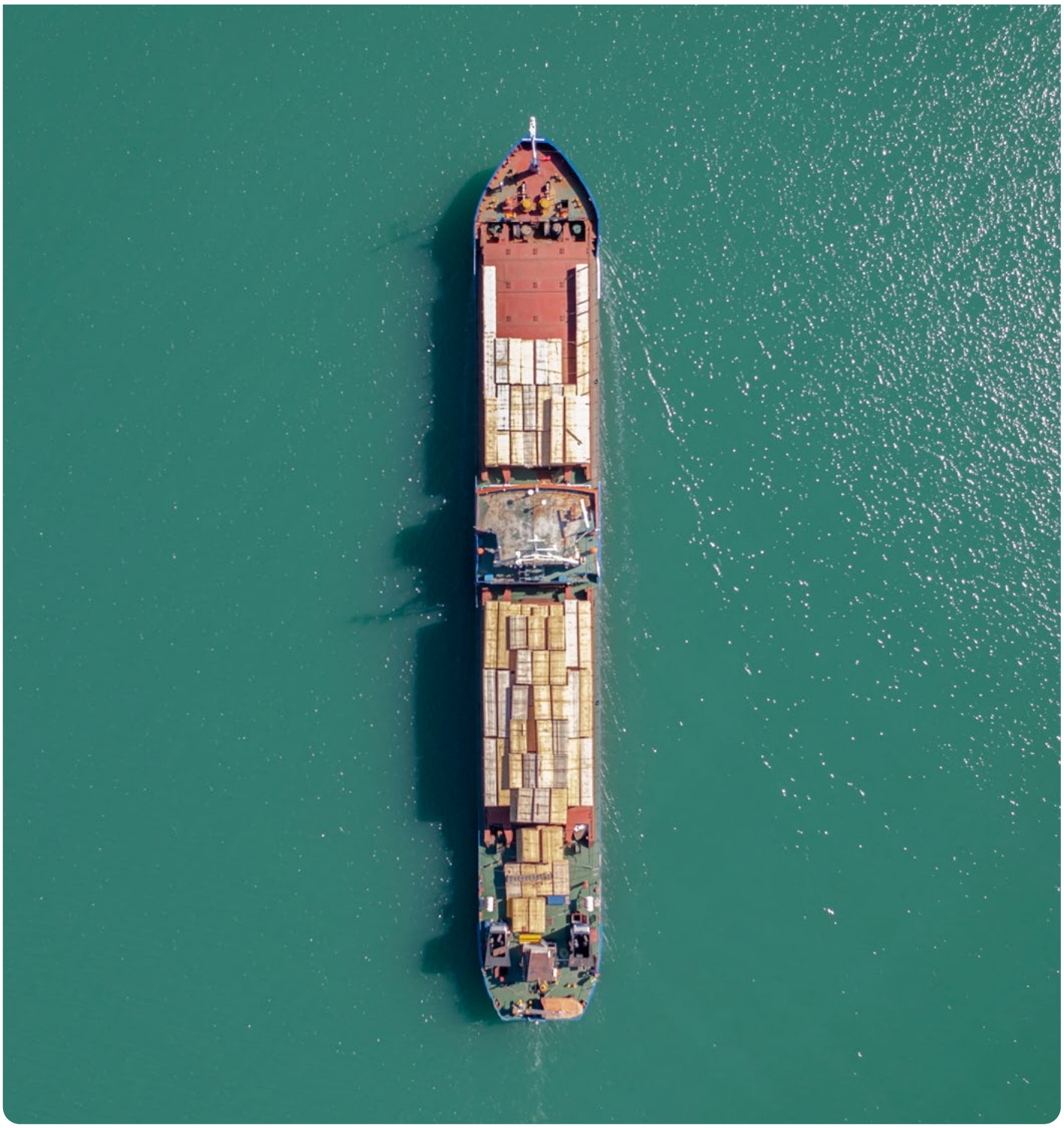
Wood products accounted for 13% of the country's total exports and are a key component in managing the country's current account with the rest of the world. A current account deficit has been observed in every of the last 22 years according to the World Bank, and recently reached -8.6% in 2022 following a reduction in international tourism. This backdrop makes clear the importance of timber to the New Zealand currency and the wider economy.



Source: World Bank WITS

As with many global commodities, China plays a significant role as a net importer, receiving more than half of New Zealand's wood exports. With respect to unprocessed log imports, New Zealand has met over half of China's import demand in recent periods.

A relatively large portion of forest product exports from New Zealand are in this unprocessed form – with 63% of roundwood produced being exported as logs. Exporting in this form is somewhat inefficient, in that the whole log, inclusive of its residual water weight and what will eventually be relatively low-value co-products, is shipped, rather than only the high-value end products. This suggests there is scope for the domestic wood processing sector to capture more of this value should sufficient investment in facilities be made.



Trade and timber price trends

In the past 20 years the New Zealand timber export trade has grown steadily, approximately doubling in that time period as additional volumes of wood reach their first harvest. The market has been receptive to this volume, with a continual real rise in price accompanying the increased volume. This is partly a function of the global nature of the timber market, with established routes into many economies, allowing increased domestic production to find willing buyers.

As noted, the key economy buying timber from New Zealand to date has been China. This demand has largely tracked that economy's wider growth pattern, which is typical of both developed and developing economies. As economies mature, the demand for wood changes but typically increases in magnitude – with a reduced reliance on wood for fuel and an increased demand for wood as an input to construction and manufacturing. There is typically an additional rising indirect demand for wood, for transport and logistics chiefly in the form of pallets and boxing.

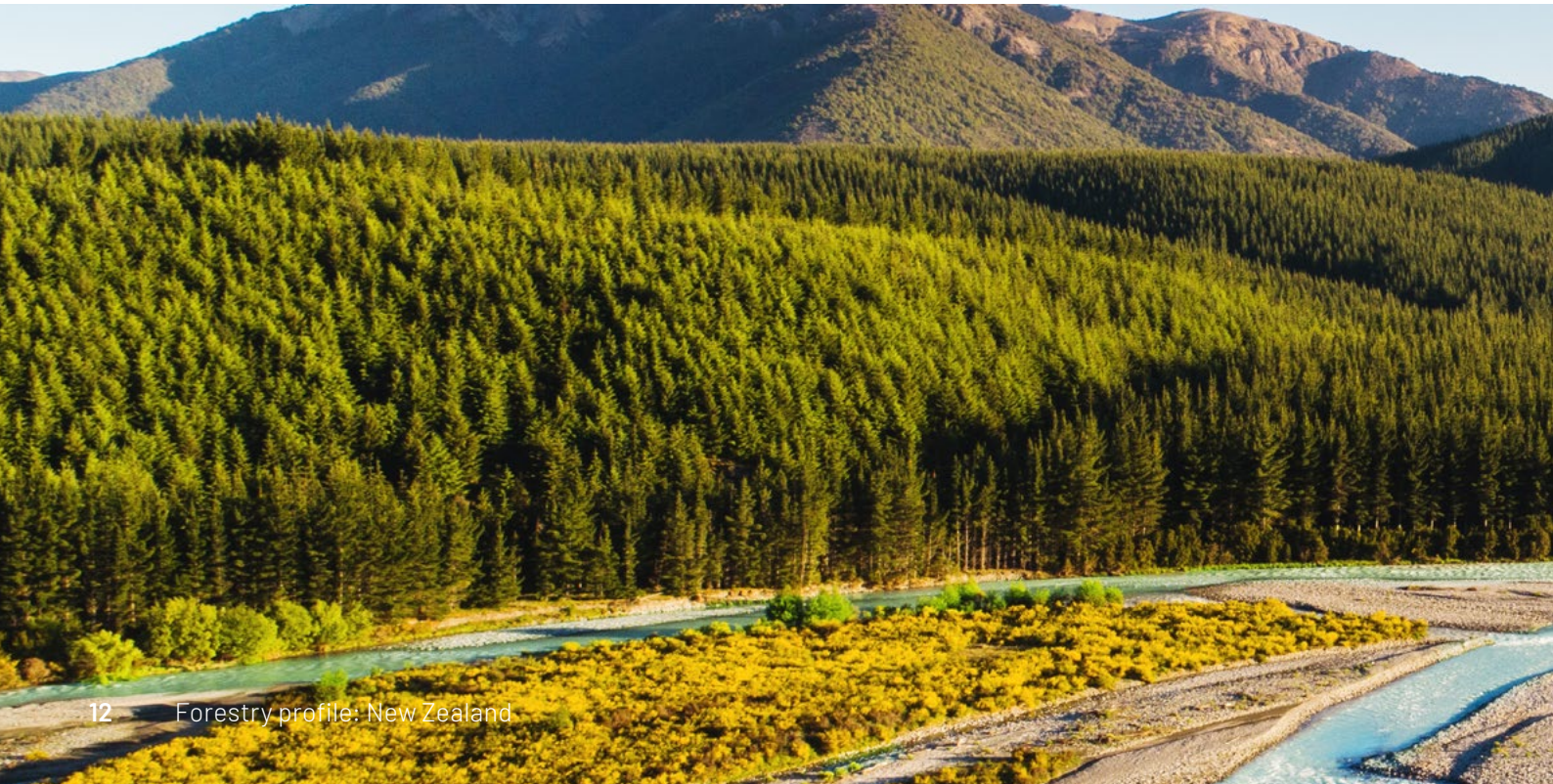
In this context, it is observed that China's wood consumption per capita is currently c.0.4m^3, or 60% of the global average, leaving scope for further expansion.

The natural export regions for New Zealand include most of South Asia – home to more than quarter of the world's population and with little in the way of domestic grown construction timber. The economies here are growing and following a well-established path of urbanisation, with a consequent increase in the demand for wood products expected. India, for instance is cited[1] to forecast a 70% increase in the demand for roundwood over the next decade – rising from 57 million m^3 to 98 million m^3, much of which will have to be met from imports. This increase alone would absorb New Zealand's entire production.

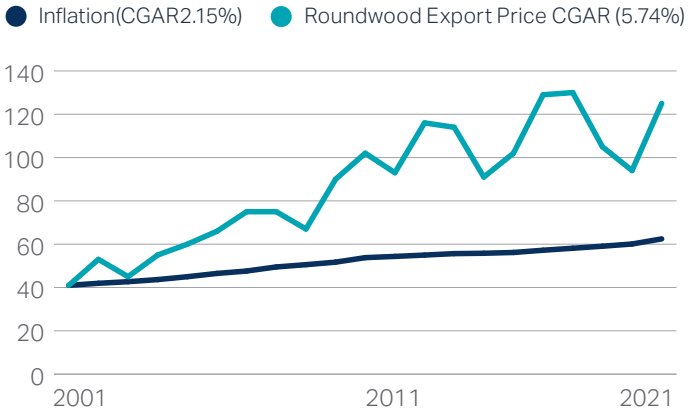
The wider context for this is that global demand for wood is set to quadruple in the period to 2050, according to research produced by the World Bank. This is set against typical timber growth periods which would mean that supply is essentially static due to the length of a growing rotation.

To meet this demand, New Zealand is in a strong position with its established forestry, relatively short rotations, and developed routes to global markets. These market characteristics, as well as the asset's history to date, provide an increasingly positive backdrop for forestry investment returns.

1. International Tropical Timber Reports (2021)

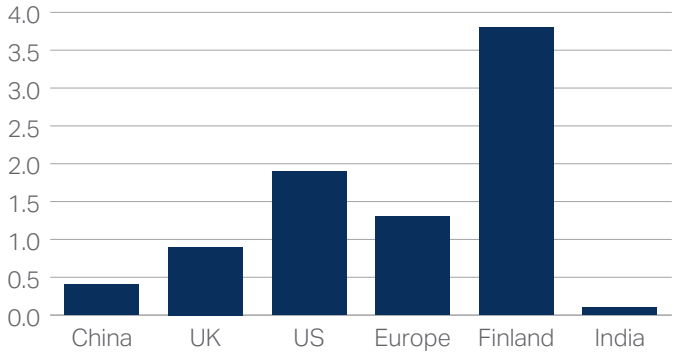


NZ export timber price and inflation



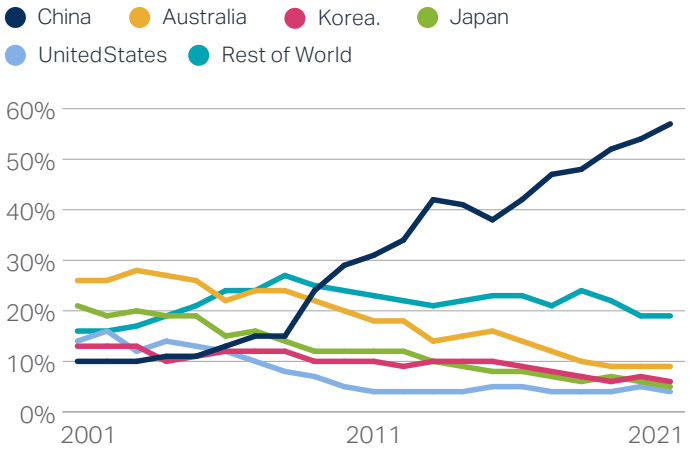
Source: FAO; Statista

Annual wood consumption per capita



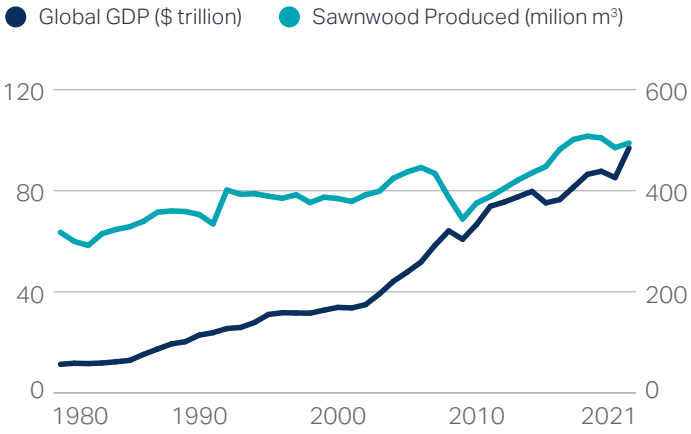
Source: NZFFA; UNCE; US Forest Service; CSE

Top five New Zealand wood export destinations (%)



Source: WITS

Historic sawnwood produced and global GDP



Source: Macotrends; FAO



Carbon

The New Zealand Emissions Trading Scheme (NZ ETS) launched in 2008 as one of the first net emission reduction initiatives based on the principle of market-led carbon pricing.

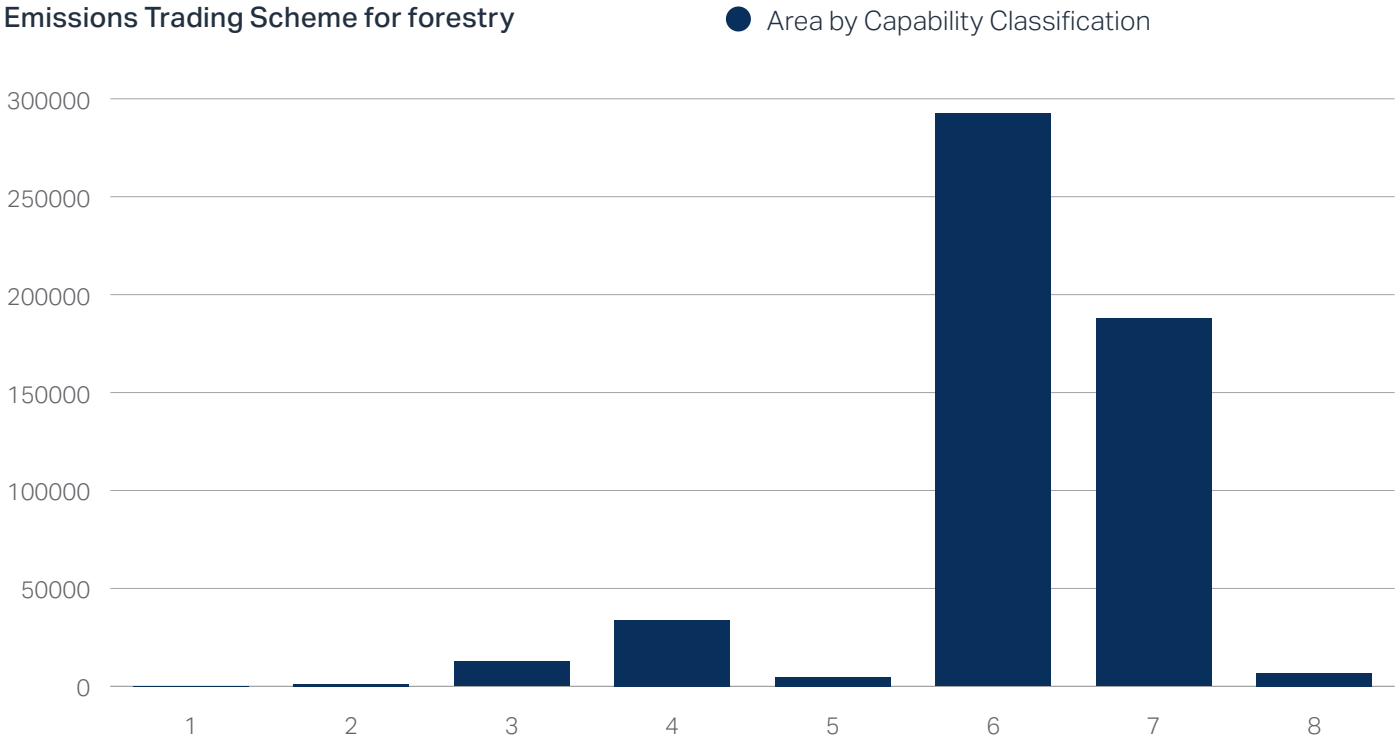
Following COP26, New Zealand has pledged ambitious goals of reducing emissions to 50% of 2005 levels by 2030 and achieving net-zero emissions by 2050, with the NZ ETS serving as the primary tool to attain these targets.

Each NZ carbon credit represents one tonne of carbon sequestered from the atmosphere. As trees are one of the most effective ways of capturing carbon, this mechanism has been a boon to the forestry sector, enabling profitability during periods of limited cash flow. Consequently, land is being utilised for both conventional commercial forestry and the establishment of "permanent forestry." The latter involves planting forests without an intention to harvest, with the core financial driver being the generation of carbon credits.

Some land-use concerns have been raised by agricultural constituencies, though it is noted that ETS forestry is primarily associated with less favourable land. The New Zealand Forest Service's 2022 report indicates that of the 540,000 ha of registered ETS forest land, 91% is on Land Use Capability classification of 5 or worse. This is land defined as "having serious limitation for arable production but can be suitable for pasture or forestry".

An acceleration in forestry is seen in many quarters as an imperative for New Zealand to meet its emission reduction targets. In pursuit of this, permanent carbon farming forests are primarily made up of radiata pine, which grows best in the available conditions, sequestering carbon at the highest rate.

Emissions Trading Scheme for forestry



Source: New Zealand Forest Service 2022

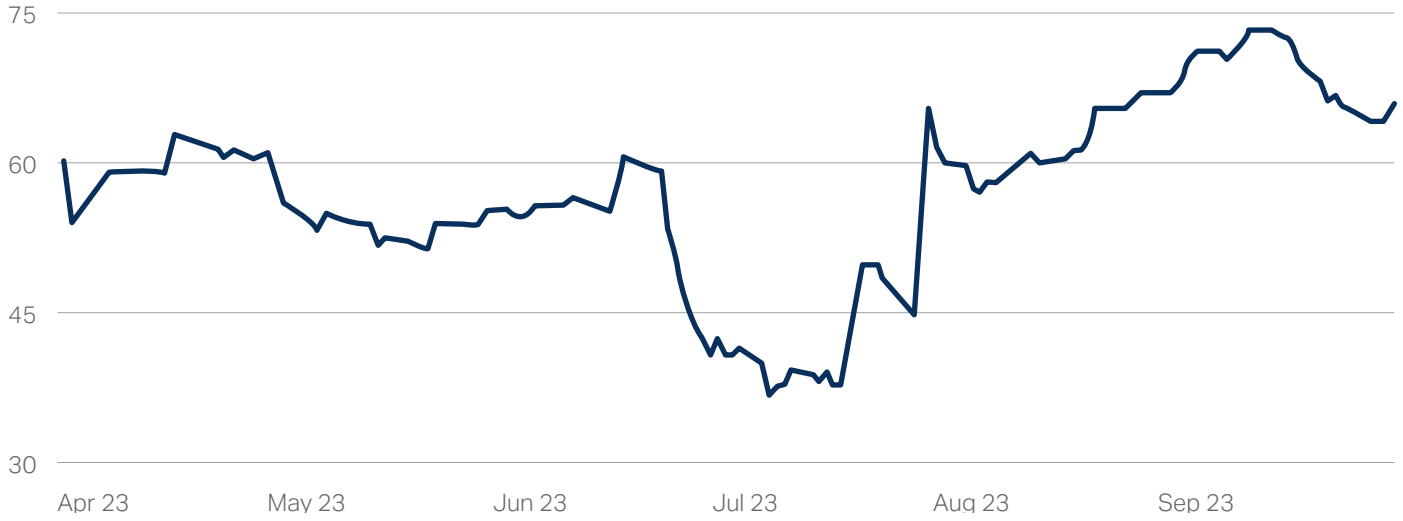
Recent NZ carbon credit developments

In the first half of 2023 the NZ credit price moved significantly from c.$70 to a low of $37 before recovering to $70 in September. These price movements followed government consultations on the mechanism intended to address concerns that an abundance of credits present in the market may diminish action taken to reduce emissions.

The Emissions Trading Scheme has been cited as partly responsible for a lack of progress on gross emissions reductions. While this may be argued as the logical outcome of an emissions trading scheme, the sharper focus in recent years on ensuring emissions are reduced first before offset is likely driving opinions in some sectors.

Policy uncertainty of this sort typically results in pricing volatility though the fundamentals of the programme have buoyed the market to date.

Price History (NZ$)



Source: Commtrade



New Zealand as a forestry investment destination

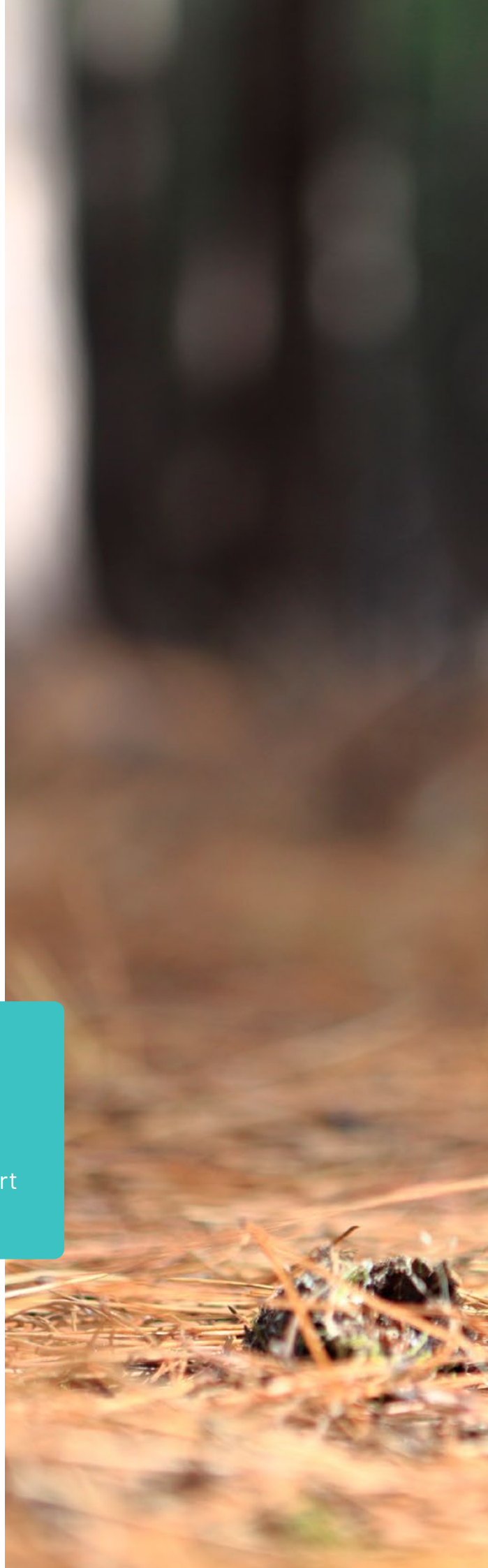
Forestry in New Zealand is a well-established investment class that has held international appeal since large sections of the estate entered private ownership over three decades ago.

It plays a key role in the country's economy, taking advantage of the favourable climate and geography.

The product output supplies some of the fastest growing nations globally, with New Zealand acting as the natural supplier of construction timber to South Asia. In recent years the growth in planting and the interest in carbon sequestration and credit generation have attracted wider interest. In addition to this natural capital appeal, the fundamentals of forestry for timber in the region remain strong providing a positive investment return outlook for forestry investors.



Gresham House manages forestry assets in New Zealand on behalf of institutional investors as part of our global forestry asset management services.





(0) 20 7382 0999 info@greshamhouse.com

www.greshamhouse.com

Copyright © 2024 Gresham House plc.

Gresham House Asset Management Limited (FRN 682776) is authorised and regulated by the Financial Conduct Authority.

Gresham House
Specialist investment