FOREST OWNERS ASSOCIATION

Submission

On

Report of the Parliamentary Commissioner for the Environment, Alt-F Reset: Examining the drivers of forestry in New Zealand

Submission to:
Environment Committee, New Zealand Parliament

6 October 2025

Growing Your Future

Contents

FOREST OWNERS ASSOCIATION

New Zealand Forest Owners Association

The New Zealand Forest Owners Association Incorporated (FOA) is the representative membership body for the commercial plantation forest growing industry. FOA members are responsible for the management of approximately 1.2 million hectares of Aotearoa New Zealand's plantation forests and over 70% of the annual harvest.

In 2024, the forest growing sector was worth $5.75 billion in export value and it is anticipated that total export returns for forest products will reach $7.33 billion by 2027[1]. The sector has a 12% share of rural land use and a high proportion of Māori landowners (48%). The sector contributes 1.6% of New Zealand's GDP and employs approximately 42,000 people in wood production, processing, and the wider commercial sector. Commercial forests sequester approximately half of New Zealand's carbon dioxide emissions.

General comments

We welcome the opportunity to provide feedback to the Environment Committee on the *Report for the Parliamentary Commissioner for the Environment, Alt-F Reset: Examining the drivers of forestry in New Zealand* ("the report"). FOA was highly supportive of the report's production and worked with the Parliamentary Commissioner for the Environment (PCE) to facilitate connection with forestry sector stakeholders and knowledge holders.

Overall, we consider that the body of the report is well balanced and provides important information on forestry systems and land use adaptation in New Zealand. There are a number of recommendations made by the PCE in the report that FOA agrees with. However, we have concerns that some of the report's recommendations diverge from the substance of the wider document. Some recommendations appear to have been reached in isolation from the comprehensive evidence collated, and FOA is concerned that the report recommendations were used to promote PCE's established position on the phase-out of forestry from the New Zealand Emissions Trading Scheme (ETS).

The report's conclusions and recommendations are sometimes aspirational and lacking in practical detail about how native afforestation can be achieved. Foresters agree that there are some parts of New Zealand that should not have been planted in commercial production forestry, and now foresters and their communities are working on dealing with legacy issues. It is important to recognise that forest managers are contending with land management decisions made 30 years ago using the best available knowledge at that time, and that a changing climate has made growing conditions more challenging. Foresters are working on adapting their land management practices to changing conditions, for example considering how retirement of highly erodible land via reversion to native forest could be achieved to balance the best environmental, social and economic outcomes at place.

[1] https://www.nzfoa.org.nz/images/FOA_Facts_and_Figures_2023-2024_-_Web_file.pdf

The report clearly articulated the water quality and biodiversity benefits of plantation forests over other productive land use types throughout, however this message was not well captured in the report's recommendations and conclusions.

In general, the report has taken an environmental view ignoring the economic importance of forestry to New Zealand. We urge the Environment Committee to review the appended report (attached as Appendix 1) the *Case for Change: Increasing the resilience in New Zealand forestry through diversification* prepared by Forest Growers Research for the Ministry for Primary Industries (MPI). The Case for Change Report addresses the same topic as the Alt-F Reset Report but focuses on where the forestry community can see an opportunity for further work. The *Case for Change Report* was produced in August 2025 taking into account the PCE's Alt-F Rest report recommendations. The table below summarises where there is agreement between the reports and where the reports differ.

Table 1: Comparing the findings of the Alt-F Reset Report and the Case for Change Report

Where the reports are aligned	• Radiata pine will continue to be central to New Zealand's production forest industry. • There are multiple biotic and abiotic threats facing our forests. • There is an urgency around species diversification. • There are multiple knowledge gaps. • Consistency in forest policy is essential for increased certainty under the long-term horizons in forestry. • Farming and forestry are complementary land uses. • Research must continue. • Review of the New Zealand Standards and Building Code will make it easier to use alternative species. • There are multiple barriers to increased planting of alternative species
Where the reports differ	• The PCE sees ETS reform as the primary mechanism for driving change in the long term. The Case for Change report is focused more on immediate operational barriers such as establishing markets and scaled production to meet them, as well as responding to weather events such as Cyclone Gabrielle. • The PCE sees carbon forestry as fundamentally flawed. The Case for Change report views carbon forestry as a valuable revenue stream for farmers and foresters.

	• The PCE recommends a top-down regulatory approach to change while the Case for Change report proposed a bottom-up pathway through industry coordination and market development. • The PCE sees indigenous forestry as a greater component of future afforestation than industry stakeholders. • The PCE primarily focused more on timber, while the Case for Change report highlighted the importance of diverse product innovations for the future.

Comments on the report's recommendations

Recommendation 1: Reform the ETS

FOA disagrees with the PCE's recommendation to phase out forestry offsets. We submit that the ETS should remain the cornerstone for climate change mitigation and rather than constraining forestry participation, greater onus should be placed on emitters to balance the scheme and reduce gross emissions. We recommend reducing industrial allocations for emission intensive industries at greater pace, and using forestry offsets to abatement hard to reduce emissions.

We submit that predictions made about the rate of afforestation are not correct, but even if they were, the projected 894,000 hectares detailed in the report would only constitute a 3% increase over 25 years. New Zealand needs more trees, both native and exotic, to achieve our climate change ambition and to avoid purchasing costly offshore credits. Trees need to go in the ground now to reach the level of sequestration required to meet our targets, trees planted in the lead up to 2050 will not sequester the amount of carbon required. Warming will not be held at 1.5 degrees, and New Zealand needs to heighten our climate change ambition to account for this. We need every tool in the toolbox at our disposal, and withdrawing forestry from the ETS without a viable alternative approach is too risky.

The removal of forestry offsets from the ETS would place disproportionate hardship on small-scale farm foresters and Māori foresters who account for approximately 80% of ETS participants. This recommendation is counterproductive to other recommendations made by PCE to integrate pastoral farming on high-risk land with agroforestry (page 172). Trees on farms will ultimately generate a more resilient landscape.

What the ETS needs most is policy stability. Recurrent consultations and frequent changes to the ETS create uncertainty and discourage long-term investment. Forest owners need stable, science-based policies that recognise the real and measurable contribution of forests to climate mitigation.

Recommendation 2: Create a separate biogenic trading scheme

FOA agrees that the farming sector should be accountable for methane generation and that methane emissions could be offset by forestry. We disagree with the approach proposed by PCE to establish a separate biogenic trading scheme, this would add obstructive and perverse complexity

to the system. Running separate systems would mean duplicated infrastructure, governance and compliance mechanisms. It would also require the government to establish new rules, registries and monitoring systems at increasing costs to both government and participants. Without a clear transition plan, it would also risk alienating current participants in the ETS, likely leading to Treaty of Waitangi claims and property rights issues.

This question also gets back to the fundamentals of the ETS as a policy tool and market to help us meet our emissions reduction goals. The ETS was set up as a multi-gas system, but exclusions and allowances over the years have led to the tool not working effectively. An example of this are the current over supply issues within the ETS of units. We would like to see a system that valued forestry offsets as representing direct climate action, and complimentary policy measures taken through the ETS to ensure that emitters are facing the full cost of their emissions.

Fragmenting the market could also reduce liquidity and efficiency, leading to price disparities between schemes and undermining the overall carbon price signal. We need to find ways to stabilise the ETS and encourage long-term investment in emissions reduction technologies and practices. The ETS is a complimentary tool, and the focus should be not on further reforming it but on creating complimentary measures that help it reach its full potential and operate effectively.

Recommendation 3: Reform the permanent category in the ETS

We agree with recommendation 3.1 that permanent forests must have long-term management plans for the management of pests, fire, extreme weather and disease. And it is important that management plans are reviewed and remain relevant for the perpetuity of the forest. However, we disagree with recommendation 3.2 to assign permanent forest type categories – exotic, native and transition. This will create perverse complexity, the scheme as it exists currently has sufficient measures, including penalties, to deal with accounting discrepancies.

Recommendation 4: Long term physical and financial risks to the nation's forests

We are supportive of recommendation 4.1, further research which investigates long-term risks to forests in a New Zealand context. We note that pre-1990 forests and native forests form a significant proportion (7million hectares) of our nationally determined contribution (NDC) and as such a significant proportion of our national climate liability sits with the government. Any analysis undertaken should take into account regionally specific circumstances and capture a broad suite of scenarios, New Zealand wide.

We question how costs borne to cover forestry recovery from adverse weather events could be applied equitably for pre-1990 forest owners given they have received very little benefit from the ETS. We continue to support the current policy of pausing carbon liabilities to enable recovery from significant adverse events, in light of the wider community and public benefit from foresters redirecting funds into recovery rather than paying carbon liabilities.

Recommendation 5: Investigate how the value of forest carbon sequestration in the ETS could be discounted to reflect the risks of forest impermanence

FOA disagrees with recommendation 5. Existing ETS mechanisms already address the risk of forest impermanence. The permanent category (and averaging) limits credit issuance to reflect long-term carbon storage, there is a low risk within the existing system of over-crediting - forest carbon is not treated as temporary. Further discounting forest carbon credits would devalue legitimate sequestration efforts.

We note that MPI is in the process of updating the look up tables which inform the carbon credits issued. Carbon stock estimates have been reduced by 12% for radiata pine and 5% for other species to provide a margin of safety.

Natural disturbances like wildfires, pests, droughts and storms can reverse sequestration, and climate change is increasing the likelihood of these events. However, this is another area where the market is providing solutions. Rather than discount and take revenue off foresters who need the carbon revenue to combat these challenges, issues of permanence are being addressed at the global level with innovations in insurance and trust funds to ensure that foresters aren't just relying on pauses of liability and credit reserves to combat losses. New Zealand also maintains monitoring currently in perpetuity on ETS forests, so that if permanence becomes more of an issue, we will know the scope and the scale of the problem quickly and can work with landowners on addressing it.

Recommendation 6: Investigate ways that forest companies cover the cost of environmental damage

FOA disagrees with the assumptions on which PCE has identified "the exacerbators" and made recommendations about environmental damage. It is not clear what "*environmental, cultural and social costs"* PCE is referring to on page 172 of the report.

Apportioning costs must occur in a directly attributable manner to be equitable. The woody debris generated from cyclone events is often blamed squarely on forestry, woody debris surveys undertaken following the June/July Tasman storm events found that only 5% of the woody debris accumulated on Tasman beaches was forestry slash e.g. attributable to active harvest operations. Similarly, a significant proportion of New Zealand's wilding conifer problem is caused by contorta pine, a species that was not planted here for commercial purposes but planted either by the government for erosion control or as farm shelter belts. The forestry sector is often blamed for environmental damage it has not caused. If environmental damage is to be apportioned then it should be apportioned equitably across all the landowners and it should be proportionate to the impact.

Forestry is regulated via the National Environmental Standards for Commercial Forestry (NES CF) which was developed over an eight-year process, initially by the Ministry for the Environment (MfE) and subsequently due to funding and priority issues at MfE was picked up by MPI. The regulatory approach was developed by ministry staff with input from a multi-stakeholder working group. By

necessity the working group did include forestry representatives, but also representatives from a range of government departments, regional and district councils and eNGO's. The goal of the NES-CF was to develop a consistent approach for regulation of plantation forestry across the country, broadly reflecting the existing regulation in place in regional and district plans of the time. Given the broad array of approaches and level of regulation across the country at the time, inevitably the NES-CF required some changes. Far from being a 'permissive regime', the NES-CF reflects a risk based approach to regulation with world-first science-based risk management tools embedded in the policy. The end result is either equivalent to or more stringent than the regional and district plan rules relating to forestry that existed at the time. Significantly, it introduced for the first time the requirement to obtain resource consents for afforestation of the most erodible terrain.

The NES CF remains a fit-for-purpose framework to regulate forestry practice. We reject recommendation 6. It is unnecessary, impractical and is based on unfair assumptions about "the exacerbators".

Recommendation 7: Ban clearfell harvesting in high-risk areas

We agree with recommendation 7.1 that high resolution mapping New Zealand wide is needed. The existing Erosion Susceptibility Classification system is too coarse and is often not fit to adequately inform the threshold tests set out in the regulations. In erosion prone, high-risk areas a high degree of site-specific nuance and remapping is required to inform sound land management decisions including retirement of areas from production this requires high resolution erosion susceptibility data. High resolution data is also needed to define which areas are high-risk and erosion prone. Until high resolution data is available it is not possible to make equitable decisions about harvest limits.

Additionally, clearfell limits may generate greater woody debris volumes from windthrow. Trees develop for the growing conditions they are exposed to, with trees in a stand providing mutual wind protection to each other. It is well understood that removing any trees in a stand will expose the remaining trees and create a greater wind throw risk, particularly in erodible geology.

The NES CF conditions currently offer a belts and braces approach to risk management that should prevent large coupe sizes in high risk areas due to the need to manage erosion, debris, and other site-specific conditions.

We agree with the following recommendations:

- Recommendation 8: Review of the application of the Forests Act to native forests established through natural regeneration.
- Recommendation 9: Develop national guidance on how native timber harvesting can be carried out in line with the Forests Act.
- Recommendation 10: Approve more alternative timbers under the Building Code.
- Recommendation 11: Afforestation scheme funding on a successful establishment and long-term maintenance basis.
- Recommendation 12: Ensure that alternative forestry systems are prioritised for research.
- Recommendation 13: Improve the availability and usability of existing knowledge on alternative forestry systems through a publicly available data system.

- Recommendation 14: Develop cross party agreement on overarching forestry policy
- Recommendation 15: Any reframing of forestry policy must engage Māori from the outset.

We urge the government to stop thinking of land use in compartments. Rather, to consider a mosaic approach to ensure productivity across the rural sector builds collectively towards greater environmental resilience in the face of a changing climate. We must continue to invest in research which delivers climate adaptation solutions across the whole primary sector in a joined-up approach.

Closure

While we do not object to our submission being made public, we would prefer that the expanded version, this version, of our submission sent 10 October 2025 is made public.

We welcome the opportunity for further discussion and engagement. We wish to be heard at Select Committee in support of our submission should the opportunity arise.

Rachel Millar
Environmental Manager
Forest Owners Association

Elizabeth Heeg
Chief Executive
Forest Owners Association

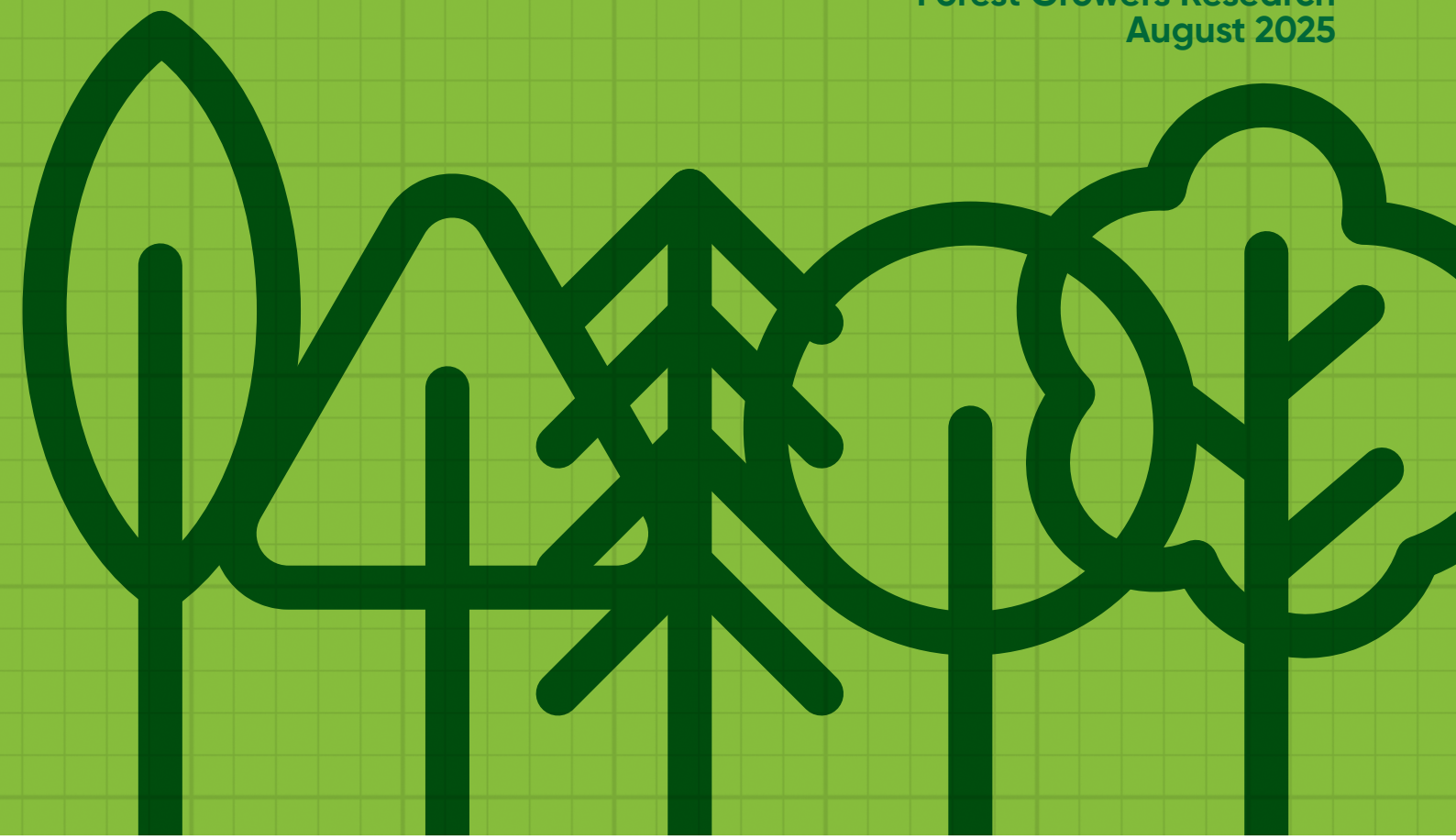
Contact Details

Rachel Millar
Environmental Manager
Forest Owners Association
Level 9, 93 The Terrace, Wellington.
Email: rachel.millar@nzfoa.org.nz
Web: www.nzfoa.org.nz

The case for change

Increasing resilience in New Zealand forestry through diversification

Marco Lausberg and Alison Slade
Forest Growers Research
August 2025



Ministry for Primary Industries
Manatū Ahu Matua

forestgrowers levy trust inc

FOREST GROWERS RESEARCH

Report prepared for the Ministry for Primary Industries
Sustainable Food and Fibre Futures Fund Contract 23067

The Case for Change project was funded by the Forest Growers Levy Trust and MPI's Sustainable Food and Fibre Futures Fund.

This report presents the views, opinions and perspectives of forestry industry stakeholders as collected through a targeted consultation process. The content reflects stakeholder feedback from diverse groups within the sector.
The report identifies consensus views and shared priorities that emerged across different stakeholder groups during the consultation process. Where strong agreement or common themes were identified across multiple stakeholder categories, these consensus positions have been highlighted and prioritised within the analysis. While every effort has been made to accurately capture and represent stakeholder perspectives, the content should be understood as reflecting the diversity of views within New Zealand's forestry sector. Not all stakeholders may agree with every consensus view presented.
The views expressed herein are those of the participating stakeholders and do not necessarily reflect the official position of any government agency or other organisation interviewed as part of the consultation process.

FOREST GROWERS RESEARCH

ISBN 978-0-473-75478-5
Published by Forest Growers Research Ltd
Date: August 2025

Forest Growers Research Ltd
99 Sala Street
Rotorua 3010

+64 7 921 1883
forestgrowersresearch@fgr.nz
www.fgr.nz

EDITING: Harriet Palmer **GRAPHICS:** Lloyd Creative **PRINTING:** Greenlees Print

Foreword:
Putting this report into perspective

This report summarises the findings from a consultation process that explored the opportunities for, and challenges to, diversifying forestry in New Zealand. The second stage of this initiative will be to use this information to guide development of new research that supports diversification.

As you read this report, it is important to reflect on the current forestry model. Where are we now? Where do we want to be? How do we get to this new future? The consultation showed us that many people have a similar vision: New Zealand needs productive, resilient, climate-adapted forestry systems with the right tree in the right place for the right purpose.

Diversification should not be interpreted as a threat to the dominance of radiata pine, rather as an opportunity to enhance, complement and expand the forestry estate. Diversification of radiata pine includes innovative management regimes, shorter rotations, improved wood properties and higher-value products and services, as well as improved recognition of public good and environmental benefits. It also includes transitional forestry, agroforestry and urban forests. New Zealand needs more trees, and more species of trees, in the landscape -- alongside native forests, within integrated farming systems and in our neighbourhoods.

There are many risks to consider, including risks to the growing crop (biosecurity, forest health, climate change, storms) and market-related risks (concentration risk). To overcome these challenges, we need to build a unified vision and leadership to ensure success on our journey to future-proof the sector. It is our responsibility to do this for the future of the forest industry, for communities and for the environment.

New Zealand is a great place to grow trees and forests, but we need better integration across the landscape to deliver a resilient, productive estate that underpins a thriving national bioeconomy. Now is the time to embrace this opportunity and work together to achieve a multi-generational, sustainable and prosperous future for radiata pine and the wider forest estate in New Zealand.

Dr Paul Adams
Research Director and Chief Executive
Forest Growers Research

Contents

Summary

The New Zealand forestry industry is at a critical juncture amid evolving market demands, climate change risks, biosecurity threats and intensifying geopolitical uncertainty. While radiata pine will continue to be a significant component of the forestry landscape, the industry needs to diversify to ensure long-term resilience.

This **Case for Change** consultation project, led by Forest Growers Research, sought to:

i. **better understand the critical barriers** hindering diversification despite acknowledged threats
ii. **identify research and development priorities** needed to overcome these barriers, leading eventually to a more resilient and sustainable forestry sector.

Sixty one people were interviewed, representing large and small forest growers, building practitioners, Government representatives, Māori forestry interests, international investors, research and development professionals, biosecurity experts, bioeconomy specialists and one non-government organisation.

- An underlying tension between economic realities and the need for future resilience ran throughout the consultation. While the significant risks from biosecurity threats and climate change were acknowledged, the economic superiority of radiata pine will likely require a significant external event to force change.

- There was strong consensus that only decisive government intervention and leadership will bring meaningful change to New Zealand's forestry industry. Stakeholders view government as the sole entity with sufficient authority, resources and long-term perspective to drive and incentivise the systemic transformation needed to move beyond radiata pine dependency.

- Over 30 potential alternative and contingency species were identified, spanning a diversity of options. It is not a simple task to prioritise which species should be selected for development.

Common themes

Nine distinct themes emerged from across the diverse stakeholder groups, encompassing main industry concerns and perceived barriers to diversification. Primary concerns were:

- **sustainability** – the need to manage environmental impacts, biosecurity, biodiversity and maintain social licence
- **investment** – lack of investment frameworks to support diversification
- **central leadership** – currently lacking, but a coordinated national strategy is deemed essential.

The remaining themes - economics, products, building applications, tree improvement, government intervention, farming integration and training - together represent the operational and technical aspects required for implementing change.

Stakeholder group perspectives

Large forest growers prioritised radiata pine for its superior economic returns, with internal rate of return (IRR) as the key driver. Despite acknowledging significant risks, their approach was cautious and reactive.

Small forest growers found it difficult to diversify due to lack of established markets for alternative species. Unified industry leadership, stable policies and coordinated supply chains were seen as crucial for achieving the species diversification necessary to manage risk. Most continued to default to radiata pine despite growing concerns about its long-term viability.

Timber construction/utilisation industry representatives identified a lack of coordination between the wood processing and forest growing sectors. Growers are making planting decisions without clear market signals and processors cannot plan for species they are unable to reliably source. Stakeholders themselves acknowledged that only a crisis may force the necessary changes.

Government representatives recognised that the forestry sector's over-reliance on radiata pine is creating significant risk. Climate change adaptation and value-added domestic processing were seen as critical priorities requiring more diverse species. Social licence, processing infrastructure and long-term investment all need to be addressed. Government sees itself supporting and partnering with the forest industry rather than leading it.

Māori interests were driven by the desire to transition from radiata pine to native species forestry. Industry governance reform was seen as a critical priority - Māori ownership of plantation forestry land will expand from 40% to 75% with

Treaty settlements, yet they lack a representative voice in the levy system. Balancing immediate practical need (e.g. employment opportunities in local processing plants) with long-term cultural aspirations is the sector's challenge.

International investors identified the Overseas Investment Office (OIO) as the single biggest barrier to investing in New Zealand forestry, preventing foreign capital from competing with domestic investors and driving investment offshore. Investors require minimum investment scales of $50million and 10,000 hectares for viability and prefer proven radiata pine monocultures over alternatives.

Forest-growing research and development representatives emphasised the need to transition from clearfell, radiata pine monocultures to more diverse, climate-adaptive and multi-purpose forestry systems. Priorities included adopting catchment-based management approaches, developing a national strategy and ensuring unified government leadership to support the shift.

Biosecurity representatives identified a critical gap between current biosecurity practices and industry needs, with immediate action required to protect existing investments while developing longer-term resilience strategies. Current biosecurity practices at nurseries and across the industry are poor, leaving a sector so dependent on a single species dangerously exposed. Biosecurity risks are increasing with climate change.

Bioeconomy sector representatives identified an urgent need for unified government leadership to drive a multi-species, multi-product forest vision, as current industry inertia has prevented the scaling up of alternative species to a point where supply is guaranteed. This has stifled innovative product development utilising alternative species.

Other sectors demonstrated that coordinated industry leadership with substantial funding can drive rapid, effective responses to threats. These sectors recognised that transformation arises from entrepreneurs and new market creation rather than established industry bodies.

Consultation insights
Three differing industry objectives were identified during the consultation:

i. maintain current economics
ii. reduce systemic risk
iii. gain/retain social licence.

Achieving all three objectives simultaneously with current methods is not feasible.

The only solution appears to be coordinated transformation which requires the unified leadership identified by so many.

Several critical patterns emerged:

- radiata's very success has created conditions for potential catastrophic failure
- there is a clear disconnect between knowing what needs to be done and doing it. The challenge is institutional, not technical
- a significant barrier to species diversification was the cycle of limited markets leading to minimal planting, in turn preventing scale and reinforcing the limited market opportunities
- there is a temporal mismatch between decision making and forest management. Political cycles are three years, forest rotations around 30 years and breeding programmes take decades of sustained investment to reliably deliver improved germplasm
- structural challenges are hindering collaboration, including offshore decision-making, differences in scale between large corporates and small growers and the need for more region-specific strategies for species other than radiata pine
- there is a growing divergence between community expectations around sustainable forestry practices and the economic imperatives continuing to favour the current forestry model.

Resilience a unifying theme
Industry resilience was a consistent and unifying theme. The Forest Research Committee (FRC) is responsible for developing and delivering the forest growers' Science and Innovation Strategy and has now adopted a framework based on five pillars of resilience: economic, ecological, technological, social/cultural and political/regulatory.

The consultation clearly showed that the current forestry industry is under threat across all five pillars, requiring strategic foresight, collaboration and innovation to build a more sustainable future.

However, the consultation process did not identify a single clear pathway forward, with stakeholders suggesting various approaches including:

- putting all resources into protecting radiata
- developing radiata and a contingency species which could slot into existing infrastructure and markets

Summary cont.

- adding one alternative species at a time as resourcing permits
- targeting three alternative species for each region to achieve local scale.

An interim programme was recommended to maintain research momentum while the strategic direction for the industry is being developed. Four key aspects were proposed for short-term research:

- **megatrend analysis** to identify potential future scenarios given global instability and long development timeframes
- **spatial mapping** to expand the existing spatial information beyond radiata
- **literature review** to determine what is already known about alternative species
- **continued funding support** for species with existing strategies (eucalypts, cypresses, redwoods).

Key long-term research opportunities identified included:

- **contingency species development** focusing on grand fir (*Abies grandis*), pine hybrids and Norfolk Island pine (*Araucaria heterophylla*)
- **developing new forestry models** including mixed species, continuous cover and farm-forestry integration systems
- **shortening radiata rotations** while maintaining wood quality to improve economics and reduce risk
- **high-value product development** in wood fibre applications; analysis of future markets
- **market aggregation** initiatives to connect growers with specialty timber markets.

The Forest Research Committee will utilise the outcomes of the consultation process to help determine which longer-term projects will form the basis of a new diversification research programme.

The consultation process has demonstrated both the urgent need for change and the significant barriers that must be overcome. Success will require coordinated action across government, industry and communities to address the institutional, economic and technical challenges identified through this comprehensive stakeholder engagement process.

Context 1

Radiata pine (*Pinus radiata*) dominates the New Zealand forest industry. For good reason: it grows almost anywhere, can be processed into a wide range of wood products, has relatively good disease resistance and has historically provided good economic returns. As New Zealand's fourth largest export earner, the industry contributes over $6billion of export earnings annually, employing more than 40,000 people[1]. Beyond the commercial benefits, radiata pine forestry plays an important public-good role through the provision of eco-system services.

It wasn't always this way. Early afforestation programmes under the New Zealand Forest Service saw a wide range of species planted, along with associated research activity. But radiata's superior performance has seen it steadily replace these other species to now make up 91% of the planted estate and 95% of new plantings[2]. Radiata's success is also its Achilles' Heel. As the operating environment becomes more volatile, the industry's heavy reliance on a single species is exposing it to increasing risk: biotic (pests and diseases), abiotic (fire and extreme weather), market (e.g., current China dominance) and social licence.

Since the disestablishment of the New Zealand Forest Service in 1987, research and development into species other than radiata pine has been undertaken by various entities (Figure 1). This ranged from various species-specific co-operative groups in the 1990s and 2000s, to industry-government partnerships managed through Forest Growers Research until the early 2020s. The last of these, the Specialty Wood Products Programme (SWP) finished in 2023, Despite significant efforts since then, consensus has yet to be reached on the direction for a future diversification programme. Short-term projects have maintained some focus on alternative species since 2023; however, this has resulted in a fragmented rather than coordinated approach.

Figure 1: Timeline for research and development into species other than radiata pine.

Forest Growers Research (FGR) is New Zealand's forest industry body responsible for managing industry-funded research and development.

This **Case for Change** consultation project, led by FGR, sought to:

i. **better understand the critical barriers** hindering diversification despite acknowledged threats
ii. **identify research and development priorities** needed to overcome these barriers, leading eventually to a more resilient and sustainable forestry sector.

Through structured interviews with large and small forest growers, building industry representatives, Government representatives, Māori forestry interests, international investors, forest-growing research and development representatives, biosecurity experts and biomaterials specialists, the consultation explored diversification to achieve resilience under a changing climate. This included species choice and siting, forest management, biosecurity preparedness, market transformation toward higher-value processing, policy stability for long-term investment, the integration of forestry with farming systems and the need for training.

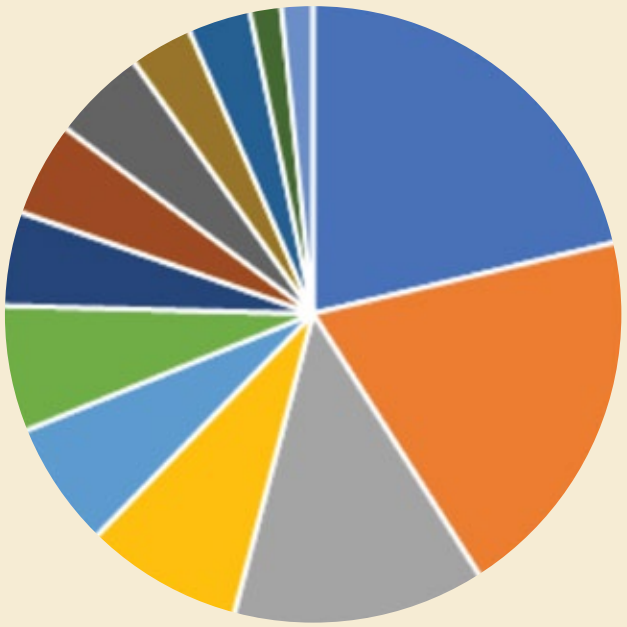
Some definitions

Contingency species	Species that fit into current radiata supply chains which help mitigate pest and disease risks while enabling continued production of similar products. This does not mitigate market risk due to a lack of product diversification.
Alternative species	Species that produce premium products, in contrast to many commodity products from radiata. They will likely have smaller volumes but higher margins (if markets are developed).
Alternative radiata regimes	Ways of growing radiata to produce high quality products outside of the current single age, 28-year clearfell regime. Rotation length significantly influences radiata economics and risk profile. And radiata's current poor social licence is partly attributable to the appearance and downstream effects of large clearfell areas.

2 Who was consulted

A team of two or three people conducted interviews with multiple stakeholders between December 2023 and September 2024 representing a wide range of interests across the forestry sector and beyond. It was important to understand the views of the forestry sector, so a total of twenty-one large and small forest growers were interviewed. International forestry investment is a key feature of the New Zealand industry and a key future driver of forest ownership and practice. Several international perspectives were sought. We also sought views from other primary industry sectors facing similar challenges.

There was also a strong focus on end-users of the products from trees, particularly in the building sector. We sought a more future-focused view in considering bioenergy and biomaterials opportunities.



Group	Number of interviews
Forest growers (large)	13
Building trends	12
Forest growers (small)	8
Government	5
Forest-growing R&D	4
Other sectors	4
International investment	3
Biosecurity	3
Māori interests	3
International markets	2
Bioenergy	2
Biomaterials	1
NGOs	1
Total	**61**

Figure 2: Stakeholder groups interviewed and number of interviews per group. (See Appendix 1 for more details.)

Consultation findings 3

3.1 Feedback by stakeholder group

Large forest growers

Large forest growers prioritised radiata pine for its superior economic returns, with internal rate of return (IRR) as the key driver. Radiata pine is described as delivering twice the IRR of Douglas-fir, the only other plantation species grown at any scale in New Zealand.

Despite acknowledging significant future risks from biosecurity threats, climate change and social licence pressures, their approach was cautious and reactive - preferring to 'double down on radiata' through improved breeding rather than major species diversification.

While they recognised the need for contingency planning and some diversification (potentially reducing radiata from 95% to 80% in certain areas), the economic reality and established infrastructure make any major shift away from radiata unlikely – unless a catastrophic event forces change.

Small forest growers

Small growers found it difficult to diversify away from radiata pine due to the lack of established markets for alternative species. Despite growing concerns about risks and long-term viability, the economic reality of requiring a 5-7% return on investment mean most small growers continue to default to radiata pine.

The need for government-led efforts to develop new markets and processing infrastructure was highlighted. Unified industry leadership, stable policies and coordinated supply chains were seen as crucial for achieving the species diversification necessary to manage risk and meet emerging market demands.

There is also a lack of technical support - loss of qualified forestry advisors at regional councils has left growers without proper guidance on alternative species. Regulatory changes post-Cyclone Gabrielle and carbon market volatility have added further uncertainty to investment decisions. Conversely, there has been growing pressure from companies such as Fonterra, who are demanding carbon-neutral products. Success stories such as redwood development in certain regions show what is possible with focused effort (including overseas investment) and regional coordination.

Timber construction/utilisation trends

There is a strong disconnect between forest growers, wood processors and product markets. All parties know there is a better way forward, but nobody is taking the first step. The situation will only improve if everyone moves simultaneously. The construction industry's risk aversion inhibits the adoption of new timber species, while major processors are reluctant to invest in machinery to process alternative species without a guaranteed supply, as they have optimised their production for radiata pine. This has created a stalemate that has hindered diversification efforts within the sector.

This fragmented supply chain is compounded by government policy and regulatory uncertainty, discouraging the long-term (25 year+) investments needed by the forest industry. There are fewer truly vertically integrated forestry companies than previously, worsening the disconnect. Growers are making planting decisions without clear market signals and processors are unable to plan for species they cannot reliably source.

Stakeholders themselves acknowledged that only a crisis may force the necessary changes, as each has rational reasons to avoid being first to move away from the profitable but vulnerable current state.

Government representatives

Government representatives recognised that the forestry sector's over-reliance on radiata pine creates significant risk. Climate change adaptation and value-added domestic processing were seen as critical priorities, as current plantation systems lack resilience. Species diversification is required. Pines other than radiata, pine hybrids, Norfolk Island pine (*Araucaria heterophylla*) and grand fir (*Abies grandis*) were identified as possible contingencies.

Government aims to double export value through onshore value-adding rather than expanding commodity log exports. However, success requires addressing declining social licence, building processing infrastructure and securing long-term investment - challenges complicated by the sector's historical dependence on a single species. Collaboration between government and industry stakeholders is needed.

Māori forestry interests

Māori forestry is fundamentally driven by the desire to transition from radiata pine monoculture to native species forestry. Eighty seven percent of Māori trusts want viable native options that provide positive cash flow without necessarily matching radiata returns. This group has concerns about radiata pine dependency following recent climate events, leading to questions about 'putting all eggs in the radiata basket'.

Economic sustainability is focused on maintaining year-round employment for whānau/hapū members through local processing operations, rather than export-based commodity approaches. Developing contingency species was therefore also supported by Māori.

Industry governance reform was seen as a critical priority - Māori ownership of existing plantation forestry land will expand from 40% to 75% with Treaty settlements, yet they

lack a representative voice in the levy system that funds industry decisions.

The overarching challenge for Māori was identified as balancing immediate practical needs with long-term cultural aspirations while ensuring values and community obligations are prioritised alongside financial returns.

International investment and markets

International investors identified the Overseas Investment Office (OIO) as the single biggest barrier to investment in the New Zealand forest industry. OIO regulations are considered to prevent foreign capital from competing with domestic investors, thereby driving investment offshore. China's market decline (despite New Zealand's 72% market share) and log price volatility have also created fundamental investment uncertainty.

Investors require minimum investment scales of $50million and 10,000 hectares for viability. Proven radiata pine monocultures are attractive because of established markets and processing infrastructure and low perceived risks. International investors saw carbon markets and onshore processing development as offering future opportunities. However, the immediate priority was removing regulatory barriers and managing market concentration risks. If the New Zealand market were to become unviable (whether from an investment perspective or a pest/disease incursion), international investors have the flexibility to quickly take their investment elsewhere.

Forest-growing research and development

This group include people involved in forestry education, research and consultancy. They saw the overarching challenge to be transforming from a radiata pine monoculture to a diversified, climate-adaptive, multi-purpose forestry sector that integrates with agriculture and delivers both economic and environmental benefits.

The highest priorities were establishing unified government leadership and national strategy, followed by diversifying away from radiata pine dependency to reduce market, biological and innovation risks. Success requires moving beyond single-purpose forests toward integrated multi-benefit management that recognises and rewards these benefits. Agricultural and forestry sectors need better integration and more shared knowledge.

Biosecurity

The consultation revealed a critical gap between current biosecurity practices and industry needs, with immediate action required to protect existing investments while developing longer-term resilience strategies. Priority must be given to implementing basic biosecurity measures (e.g. company protection plans, forest hygiene, nursery practices) and comprehensive disease resistance screening of radiata pine germplasm, as prevention costs would be far less than response and recovery.

The medium-term focus should shift to species diversification strategies and genomic technologies, while longer-term systemic changes in policy frameworks, indigenous partnerships and climate adaptation would build on this biosecurity foundation.

Bioeconomy (bioenergy and biomaterials)

The bioenergy and biomaterials sector identified an urgent need for unified government leadership to drive a multi-species, multi-product forest vision, as current industry inertia has prevented the scaling of alternative species beyond radiata pine monoculture.

The evolution of pulp mills and refineries into bio-refining companies can create immediate commercial opportunities for species such as *Eucalyptus fastigata*, Douglas-fir and redwood, but requires integrated supply chains with long-term contracts to provide investment certainty.

Critical information is lacking on energy and chemical properties of alternative species and genetic engineering is needed to accelerate improvement. These research priorities can only be effectively implemented once strategic leadership creates market conditions that justify the investment.

Other sectors

The wine and arable sectors have demonstrated that coordinated industry leadership with substantial funding (wine's $13-14million annual levy from 2% of sales) can drive rapid, effective responses to threats such as climate change and biosecurity risks. Both sectors prioritised proactive diversification strategies - for example, wine maintains 20% investment in alternative varieties despite Sauvignon blanc's dominance, while the arable sector successfully pivoted from growing wheat for human consumption to livestock markets – showing that profitability can be maintained while reducing single-product dependency.

Both sectors recognised that transformation arises from entrepreneurs and new market creation rather than established industry bodies. Arable farming's Cultivate Ventures[3] investment fund provides a model for how levy-funded industries can systematically back innovation without constraining themselves by supporting only existing players and current practices.

Non-governmental organisations

Only one NGO agreed to be interviewed. This one view demonstrated a desire to transition forestry practices away from clearfell monocultures to diversified, mixed-species

systems using catchment-based management approaches. They supported native species afforestation funded by reformed carbon pricing, differentiating native from exotic forestry. The group strongly opposed policies that allowed New Zealand to 'plant our way out of climate change'. They wanted to see permanent carbon sinks rather than short-term ETS-incentivised planting, intergenerational forest planning rather than short rotations and remaining native forests protected from logging.

Cross-agency collaborative management[4] is needed to address '200 years of environmental exploitation' requiring systematic restoration and risk reduction through species diversification.

3.2 Feedback by theme

Nine distinct themes emerged across the diverse stakeholder groups – these were elements most often cited as being essential factors to consider if the industry is to diversify:

- Sustainability
- Investment
- Central leadership
- Economics
- New products
- Tree improvement
- Government intervention
- Farming and forestry
- Training

While all the themes are significant, not all can be addressed through research – the primary focus of the consultation and work arising from it.

Table 1: Themes and sub-themes identified from the consultation.

Theme	Sub-themes	Frequency Sited	Substantial research focus?
Sustainability	Environmental and harvest impacts, weather susceptibility, biodiversity, biosecurity/-pests/disease, climate change, monoculture risk, social licence (e.g., rotation lengths, clearfell, coupe size, chemical use), carbon footprint, cultural importance (e.g., employment, environment)	21.2%	YES
Investment	Determining the purpose of the forest or mill, providing information for growers, advantages and disadvantages of growing forests in New Zealand, using New Zealand's positive image for value, requirement for demonstration, generating scale, certification requirements	17.7%	YES
Central leadership	National and regional strategies, co-ordinated marketing, linking growers and processors, funding, scale, supply chain, domestic versus export markets	17.1%	NO
Economics	IRR, whole tree usage, recognising and valuing non-timber benefits, carbon, harvesting	11.7%	YES
New products	Processing and product improvement and diversification	9.3%	YES
Building	Barriers for timber, role of specifiers, structural engineers, architects, modulisation, standards, council compliance	7.4%	YES
Tree improvement	Genetic advances to be made in other species, gene editing, tissue culture	6.9%	YES
Government intervention	Subsidies, stability, regulation	6.2%	NO
Farming and forestry	Integration of forestry into farming - net carbon zero, get to scale in minor species, training	1.8%	NO
Training	Engineers and architects in the use of wood, advisors for growers	0.8%	NO

The analysis indicated fundamental challenges around sustainability (21.2% of citations), with discussions dominated by environmental impacts, biosecurity and biodiversity concerns and the critical need to maintain social licence to operate.

Investment considerations (17.7%) and the clear need for central leadership (17.1%) followed closely, highlighting industry-wide recognition that clear investment frameworks and a coordinated national strategy are essential if the sector is to transition away from radiata pine toward more resilient, diversified forestry systems.

The remaining themes - encompassing economics, products, building applications, tree improvement, government intervention, farming integration and training - together represent the operational and technical aspects identified by stakeholders required for implementing this change.

3 Consultation findings cont.

Sustainability

Sustainability in all its guises is becoming a primary motivator for industry diversification. Stakeholders are becoming acutely aware that holistically, sustainability encompasses far more than just environmental protection.

Biosecurity poses a real threat, with current biosecurity practices at nurseries and across the industry 'almost non-existent'. Climate change compounds this vulnerability through increasing storm severity, shifting pest and disease pressures and growing conditions changing more rapidly than ever before.

The sector's social licence to operate is being actively eroded following extreme weather events, with communities now holding companies accountable for storm clean-up and questioning clear-felling practices. Post-Cyclone Gabrielle, a ministerial enquiry recommended restrictions to large-scale clear-felling on the East Coast, while FSC certification has been suspended for one company. The current monoculture leaves the forestry sector highly vulnerable to catastrophic failure from any single shock.

Investment

The challenge of attracting capital to a sector requiring decades-long commitment while operating under increasing uncertainty was a common theme. There are key information gaps for investors, who need clearer understanding of forest aims, grower education, New Zealand's competitive advantages and the scale required for viable operations. International investors face barriers through the Overseas Investment Office, described as a 'serious impediment' that forces capital elsewhere. Plenty of foreign capital is known to be available if restrictions were relaxed.

The lack of international investment in New Zealand's sawmills for around 50 years demonstrates the barriers to new processing. Investment follows demonstration rather than preceding it - stakeholders need to see successful models of diversified forestry before committing significant capital, yet creating those demonstration models requires upfront investment that current market structures do not incentivise.

Central leadership

The urgent need for a coordinated industry strategy is another high priority if the industry is to diversify successfully. While other industries are considered to be 'consolidated, coordinated and sophisticated' in using their lobbying power effectively, forestry is 'much more fragmented and needs to defend itself.' The current forest industry governance structure is considered reactive rather than proactive; 'lack of leadership to develop new markets' creating a fundamental chicken-and-egg situation where minimal markets for alternative species mean minimal planting occurs.

Without unified direction, the industry has diluted effort across too many species (more than 30 were identified during the consultation) rather than building scale in one or two alternatives. Stakeholders advocate for choosing a species and building it up, but achieving scale demands coordinated planning that the current fragmented structure cannot deliver.

Economics

The complex financial realities that make alternative forestry systems appear risky were recognised, despite potential long-term advantages. Standard forestry discount rates (typically 7%) emphasise upfront costs, systematically disadvantaging slower-growing species that might deliver superior long-term value. Alternative production systems involving longer rotations or lower-intensity harvesting require high-value timber markets that are currently underdeveloped.

High establishment costs for native afforestation in particular, combined with greater uncertainty about financial returns compared to radiata pine's well-understood economics, create substantial barriers to investment even when environmental benefits are clear. Financial mechanisms to reward non-timber forest values (erosion control, biodiversity, water quality) are largely absent.

New products

Market-driven innovation is needed to justify investment in alternative species. Lack of markets has discouraged planting, which in turn has limited market development. Significant opportunities exist in engineered wood products, appearance-grade timber, high-value biomaterials, chemicals and liquid fuels; however confidence in a species or product requires evidence of confirmed market demand rather than hoping markets will develop.

Processing infrastructure remains almost '100% optimised for radiata', with major processors viewing alternative species as a headache requiring minimum 10-year volume commitments before considering reconfiguring equipment to other species.

Building

Further barriers prevent market development for alternative timber species despite their potential superiority to radiata in some applications. While radiata pine is classified as an 'acceptable solution' under Building Code standards, alternative timbers require expensive and time-consuming 'alternative solution' applications for each project.

The construction industry's risk aversion compounds this - architects want more species options but avoid New

Zealand-grown alternatives due to poor reputation and insufficient research and development on performance characteristics such as fire testing and durability. Often 'one bad experience has prevented uptake…' Building standards, written by product representatives rather than users, mean naturally durable timbers that do not need chemical treatments have largely been excluded from mainstream construction markets.

Tree improvement

Some fundamental science work is needed to support species diversification. Restrictions on genetic engineering technology are considered to have left the country 'out of step with other parts of the world' in addressing critical disease threats such as pine pitch canker and red needle cast. Certification systems (e.g., FSC) continue to block uptake of gene technologies despite the introduction of the Gene Technology Bill in New Zealand.

New Zealand Dryland Forests Innovation's durable eucalypts programme has been the only substantial breeding programme in a species other than radiata pine in recent times, with some limited breeding work in redwoods and cypresses.

Government intervention

The fact that policy stability is essential for long-term forestry investment was highlighted. Changes in government and lack of policy longevity discourage investment in a sector with 20-30 year investment horizons. Critical regulatory barriers such as Building Code compliance, which demand extensive testing for each new species and application, effectively block market access for alternative timbers regardless of their technical performance.

Farming and forestry integration

Integration of forestry and farming is considered the most promising pathway to eventually reach the scale required for alternative species development, but much more support is needed if integration is to happen. Advisory services that historically provided farmers with integrated land-use guidance have been lost in recent decades, and 90% of small growers have defaulted to radiata pine. Agricultural advisors have 'limited or no forestry knowledge' and catchment care groups rarely include forestry expertise. This leaves farmers without integrated guidance on how trees could enhance rather than compete with their farming operations.

Training

This theme identified a key constraint in moving beyond radiata pine which could be addressed relatively quickly. Professionals in the construction industry lack training on alternative species properties. Current training systems do not provide the expertise to fulfil the Building Code's requirements.

3.3 Species and forestry scenarios identified

Over 30 potential alternative and contingency species spanning a diversity of options, from high-yielding coast redwoods and drought-tolerant eucalypts through to naturally durable cypresses and climate-resilient pine hybrids were identified (Appendix 2). While none can match radiata pine's ability to grow across New Zealand's diverse topography and soil types, each offers diversification options for different sites and market demands.

A range of forestry models was also identified, spanning from short-rotation radiata pine plantations to more diverse approaches incorporating native species (Figure 3). Discussion largely centred on species choice rather than specific management approaches. Although not included below, agroforestry was noted as a viable model for integration with farming.

The feasibility of advancing species other than radiata pine was often seen as constrained by available funding, prompting a stepwise approach: focus resources on improving one contingency or alternative species at a time before moving on to the next. The rationale for exploring multiple alternative species arose because, unlike radiata, these species are suited to specific regions and site types, so multiple species would need to be investigated simultaneously.

Figure 3: Multiple potential forestry models identified through the consultation.

4 Main insights arising from the consultation

The consultation revealed elements that were specific to certain groups, but also themes that cut across many or all groups. The tension between economic realities and the need for future resilience ran throughout.

Overall, there is no doubt that shifting from the current radiata model will be challenging and complex. The significant risks from biosecurity threats and climate change were widely acknowledged, but the consensus was that radiata pine's economic superiority will likely require an external event to force change. Resilience achieved through future diversification and sustainable management approaches must balance production and profitability with environmental and social objectives.

Three industry objectives were identified:

i. maintain current economics
ii. reduce systemic risk
iii. gain/retain social licence.

Achieving all three objectives simultaneously with current methods was recognised as unfeasible. This explains why every group consulted acknowledged the need for change but continues to maintain the status quo.

The only solution appears to be coordinated transformation which requires the unified leadership identified by so many. This conclusion emerged consistently across the stakeholder groups despite their different perspectives and interests.

Some fundamental insights from the consultation are summarised below:

Radiata's success is limiting future options

Radiata pine's very success has created the conditions for potential catastrophic failure. Multiple groups acknowledged this paradox.

- Large growers admitted 'no species came within a bulls roar of radiata' economically, yet also recognised 'catastrophic risk.
- Building practitioners noted the industry is 'trapped in a stable but fragile equilibrium'.
- International investors were comfortable with radiata monoculture while acknowledging systemic vulnerability.
- One stakeholder explicitly stated "a crisis might be needed to overcome inertia".

This suggests that past success is preventing adaptation to changing conditions.

The gap between knowing and doing

There was a clear disconnect between knowing what needs to be done and actually doing it.

- Small growers understand alternative species exist but won't plant without guaranteed markets.
- Large growers acknowledge the need to diversify but continue planting 95% radiata.
- Government identifies dependence on the radiata pine monoculture as a future risk but hasn't repeated the coordinated investment that built radiata 60 years ago.
- Multiple groups cite the wine industry's successful coordination model but can't replicate it.

This suggests that the challenge is not technical, it is institutional. The systems, structures or incentives to enact change are not working.

The chicken-and-egg dilemma

Key challenges are interconnected in ways that make them difficult to resolve independently.

- There are limited markets for alternative species > there is minimal planting > resulting in no significant scale > leading to limited markets.
- Processing is optimised for radiata > mills are not designed to process alternatives > meaning the alternatives are not viable > resulting in no investment in new processing.
- The returns on alternatives are not proven > leading to limited/no investment > resulting in no scale > leading to no proven returns.

This suggests the sector needs systemic, coordinated action rather than incremental change.

The temporal mismatch

Multiple groups highlighted fundamental timing disconnects.

- Political cycles (3-4 years) vs forest rotations (25-30 years) vs breeding programmes (decades).
- Market signals (quarterly) vs planting decisions (generational impact).
- Climate change impacts (accelerating) vs industry adaptation (very slow).
- Biosecurity threats (could happen overnight) vs contingency development (takes decades).

This mismatch reveals why the sector struggles with long-term thinking and why policy stability ranked so highly across groups.

Barriers to working together

The sector desperately needs coordination but has structural barriers preventing it.

- International ownership means decision-making often occurs offshore.
- Scale differences between large corporates and small growers create different priorities.
- Species suitability varies across the country, particularly under climate change, requiring regional strategies.

Yet successful forest industries globally (and NZ's wine industry) demonstrate coordination is possible and essential.

The tension between social licence and economic reality

There is a growing divergence between community expectations and economic imperatives.

- Communities often want native forests and sustainable practices.
- Economics still favour radiata monocultures and clear-felling.
- Māori aspirations (87% want natives) conflict with short-term economic priorities.

The sector must balance social and economic sustainability or risk growing opposition.

5 Other inputs to consider

There has been growing awareness both within the forest industry and successive governments that New Zealand's current forestry model is high risk. This consultation, led by the forest research sector, can be reviewed alongside other recent initiatives which have assessed facets of the forest industry and provided recommendations for change. Some of these are summarised below.

5.1 Parliamentary Commissioner for the Environment 'Alt-F reset' report 2025

In April 2025, the Parliamentary Commissioner for the Environment (PCE) released a major report: *Alt-F Reset – Examining the drivers of forestry in New Zealand*[5]. The report aimed to inform discussions around future afforestation in New Zealand, with a particular focus on native and alternative exotic species.

The PCE sees radiata pine as a valuable source for future timber production and appropriate for offsetting agricultural methane but wants to end its role in fossil fuel offsetting through the Emissions Trading Scheme (ETS). Forest diversification is considered important for future forest resilience.

The 'Alt-F reset' report offered an extensive analysis, examining aspects of future diversification and resilience in forestry, many of which complemented the consultation findings. Table 2 briefly compares the PCE's findings with the consultation findings

Table 2: The Alt-F Reset report in the context of the consultation findings – where our findings agree and where they differ.

Where we agree	• Radiata will continue to be central to New Zealand's forestry industry. • But things need to change. • Climate change is a fundamental driver for that change. • There are multiple biotic and abiotic threats facing our forests. • There is urgency around species diversification. • There are multiple knowledge gaps. • Consistency in forest policy is essential for increased certainty under the long-term horizons in forestry. • Farming and forestry are complementary land uses. • Research must continue. • Review of the New Zealand Standards and Building Code will make it easier to use alternative species. • There are multiple barriers to increased planting of alternative species.
Where we differ	• The PCE sees ETS reform as the primary mechanism for driving change in the long term, whereas our consultation focused more on immediate operational barriers such as establishing markets and scaled production to meet them, as well as responding to weather events such as Cyclone Gabrielle. • The PCE sees carbon forestry as fundamentally flawed. The consultation saw carbon forestry as a possible valuable revenue stream for farmers. • The PCE focuses primarily on environmental concerns such as carbon storage, erosion control, biodiversity and sustainable forest management. The consultation, while conscious of environmental concerns, prioritised economic viability and industry survival. • The PCE recommends a top-down regulatory approach to change while the consultation proposed a bottom-up pathway through industry coordination and market development. • The PCE sees indigenous forestry as a greater component of future afforestation than industry stakeholders. • The PCE primarily focused on timber, while the consultation highlighted the importance of diverse product innovations for the future.

Carbon markets and the ETS – stakeholders' viewpoint

In contrast to the PCE, our consultation identified the ETS as a major underutilised revenue stream that could help make forestry more financially viable if it were more accessible. Key barriers include outdated carbon tables (e.g., that do not differentiate between different exotic softwoods or hardwoods, or between high-density and low-density species), exclusion of species such as stone pine because of their classification as a nut crop and rules that prevent NZUs from being treated as commodities.

The consultation indicated that while the policy framework exists, many are struggling to effectively utilise carbon markets. Carbon price swings, policy shifts and frequent government changes are eroding investor confidence in an industry that needs long-term planning.

5.2 The Forestry and Wood Processing Industry Transformation Plan

A Forestry and Wood Processing Industry Transformation Plan[6] was produced by Te Uru Rākau – New Zealand Forest Service and the (then) Labour Government in November 2022. This followed an extensive consultation with industry. The Plan set out a high-level pathway to unlock the potential of the forestry and wood processing sectors, with a focus on economic growth, resilience and innovation, in a future low-carbon economy.

Five aspirational goals were set:

- Carbon emissions reduced by 6.9 million tonnes by 2030 and by 54 million tonnes by 2050
- Wood processing increases by 3.5 million m³ (25%) by 2030
- Export earnings from wood grow by $600 million by 2050
- Use of wood products in mid-rise commercial construction increase by 25% by 2030
- Planting of alternative species (non-radiata) increases to 20% of all planting by 2030.

The Plan considered that planting significantly more alternative species 'is key to improving the sector's resilience to climate change and to biological and economic risks'. It acknowledged that government needs to work with the forestry sector to identify and understand barriers to diversification, and that diversification will be challenging because of the existing radiata pine infrastructure and supply chains.

Many of the ITP's themes align closely with the findings of this consultation and other industry commentary. While a change of government has seen the ITP being side-lined for now, some of its recommendations may not have been lost.

5.3 Contingency Species and Alternative Species workshops 2021

In May and June 2021, Forest Growers Research held two workshops, looking at contingency species and alternative species respectively.

In both cases, participants were senior forest industry, research, education and wood processing people, many of whom also took part in the ITP and Case for Change consultations. The Contingency Species workshop imagined a series of possible future scenarios where the radiata pine industry could come under threat. Participants then developed some initial approaches to mitigation[7].

The Alternative Species workshop identified and prioritised areas where research and development efforts should be focused if an alternative species industry is to develop in New Zealand (see Appendix 2 and 3)[8].

While there has been no specific follow-up from the workshops, their outputs have fed into this consultation and will likely have informed participants' thinking to some extent.

5.4 Roadmap to a Resilient Forestry Sector workshop, March 2025

The concept of 'resilience' has received growing attention globally over the past decade, and is now being adopted as a guiding mantra by the FGR Forest Research Committee (see Section 6).

A 'Roadmap to Resilience' workshop was held in March 2025. Participants were forest industry managers and researchers. The workshop was initiated by the Forest Growers Levy Trust Small-to-Medium Enterprises Committee.

Participants agreed that New Zealand's reliance on radiata pine and export markets is indeed risky. Diversification

emerged strongly as a multi-faceted resilience strategy. This included:

- species diversification - reducing biological risks
- market diversification - reducing economic exposure
- product diversification - capturing more value
- 'approach diversification' - adapting to regional conditions rather than radiata's 'one size fits all' approach.

Three linked issues in the forest growing sector that need greater understanding and collaboration to achieve resilience were highlighted:

- recent drivers of change such as climate, markets and operational cost increases
- risks that arise from the above drivers such as forest health, fire, wind, biological productivity, market access and margin compression
- resilient solutions such as species change, forest management mitigation options, market diversification, agile supply chains and enduring policy settings.

Several participants noted the absence of effective leadership and a cohesive strategy to tackle the issues identified. Also, many highlighted the importance of greater collaboration to address shared problems and the need for proactive approaches and targeted working groups. The importance of generally improving communication and coordination within the sector was also emphasised but the industry's diverse ownership structures, competitive dynamics and different strategic priorities create barriers to coordination. Many suggested a crisis was needed before significant movement will occur.

These findings were consistent with the consultation findings.

5.5 Update to Te Uru Rākau and Ministry for Primary Industries staff, June 2025

Forest Growers Research presented findings from the consultation process to Te Uru Rākau and Ministry for Primary Industries staff at a workshop in June 2025.
This workshop revealed differences in how current Government representatives viewed their role compared to how the broader stakeholder groups involved in the consultation viewed the need for government intervention[9]. (see Table 3 below)

Table 3: Comparing the Government's view of its role in diversification vs the broader stakeholder view.

	Government representative view	Broader stakeholder view of government's role
Scale of intervention required	Targeted, technical solutions	Comprehensive, coordinated intervention across the value chain
Urgency	Immediate response via species diversification and climate adaptation	Policy certainty and strategic leadership required
Risk	Focus on biological and climate risks to existing systems	Systemic economic and investment risks identified from policy uncertainty
Role	Facilitator	Market developer and strategic coordinator (as occurred previously with radiata pine)

Government representatives tended to focus on technical challenges they could address directly and manageable problems that could be solved through incremental policy adjustments:

- **species diversification as a risk mitigation** - developing contingency species (such as other pines, pine hybrids, grand fir, Norfolk Island pine) that can be processed in existing radiata mills
- **climate adaptation through practical measures** - focusing on research needs
- **market development through existing frameworks** - working within current systems to promote value-add processing and doubling export value

- **regulatory fine-tuning** - addressing building code compliance, technical barriers and certification processes.

However, the broader stakeholder groups consider government intervention as necessary:

- **policy stability as a key requirement** - changes in government and lack of policy longevity discourage investment, with forestry requiring 20+ year investment horizons
- **strategic leadership vacuum** - multiple stakeholder groups called for government to take the lead and treat forests as strategic assets
- **market intervention necessity** - stakeholders believed only government has the scale and authority to break the 'chicken and egg' dilemma where minimal markets for alternative species mean minimal planting occurs
- **regulatory barriers as investment blockers** - the Overseas Investment Office was described as a 'serious impediment' preventing international capital from competing.

TUR and MPI representatives intimated that Government is now seeking direction from the sector on the role it should play, with a focus on how it can support rather than lead. Forest Growers Research has been approached by TUR to broker a partnership with industry to develop a resilient forest strategy and roadmap supported by a robust business case. A cohesive, well-resourced and sustained model of industry collaboration is essential for success.

Other areas of discussion included:

- the potential to use existing frameworks, such as FSC or other regulatory levers, to encourage diversification, including increased use of native species
- the need for a clear strategy for the wood processing sector, which in turn would support growers
- Government prefers to leave investment decisions to private interests but is open to partnerships, for example in the East Coast, which is already undergoing transition. A regional approach was endorsed, building on areas where progress has already been made
- strong data collection is key. Government requires and will use this information to support effective decision-making
- Government feels there is a lack of clarity around who is responsible for market development and sector leadership - both of which are seen as critical to progress
- the long-term change in thinking needed for diversification to happen may be driven through education, particularly via the School of Forestry. Students here are already engaging with broader, more forward-looking views.

In summary, while the current Government sees its role as supportive, the consultation identified strong industry consensus that meaningful change in New Zealand's forestry sector will only occur with decisive intervention and leadership by government over the long-term.

Stakeholders view government as the sole entity with sufficient authority, resources and long-term perspective to drive the systemic transformation needed to move beyond radiata pine dependency. They repeatedly emphasised that 'government needs to take the lead' and treat forests as 'strategic national assets'.

The industry believes that only sustained government commitment can overcome the industry's fundamental problem where minimal markets for alternative species lead to minimal planting, which perpetuates the lack of viable markets.

Forestry's 20-30 year investment horizons mean stakeholders saw stable government policy and strategic direction as prerequisites for unlocking the significant private and international capital – the capital needed to diversify species, build processing infrastructure and develop new market channels at the scale necessary for genuine sector transformation.

Notable one-liners...

In 1969 radiata was 54% of the estate.

If a disease arrives that kills off radiata, expect a mass exodus of investors.

100 years of R&D on radiata and still not resilient.

Foresters have gotten lazy with radiata.

Have we seen peak radiata?

Resilience is accepting and adapting to uncertainty, rather than fighting it.

Radiata and New Zealand are seen as a 'one trick pony'.

East Coast issues the best thing that could have happened to spur action and change.

A pest/disease crisis is needed to overcome inertia to switch to more diverse forestry.

Major processors have become accidentally powerful gatekeepers.

95% of levy revenue comes from radiata pine, creating catastrophic single-point-of-failure risk.

Even at 70% radiata there is still massive biosecurity risk.

Cost to respond and recover is far greater than to prepare.

Redwood, an example of getting regional scale.

The best thing that radiata can make is packaging!

The tail is wagging the dog – processing limitations dictate what can be grown, not market needs.

Contingency species will not diversify the market risk.

Trapped in a stable but fragile equilibrium – comfortable enough not to change, but vulnerable to catastrophic disruption.

A shorter (15-year) rotation would make a massive difference.

Chicken and egg - there are minimal markets for other species so minimal planting happens.

6 Forest industry resilience and the case for change

6.1 The concept of resilience

Resilience was a consistent and unifying theme throughout the consultation process and in subsequent workshops.

Resilience is defined as: ***"the capacity of a system, individual, community or entity to withstand, adapt to, recover from and grow in the face of stress, adversity, disruption or change".***

Rather than trying to pre-empt the future or prevent disturbances, resilience focuses on building the flexibility and adaptive capacity needed to navigate whatever challenges emerge. Knowledge developed under past 'steady-state' conditions is now far less reliable for predicting what will happen in the future. We are all being forced to rethink the way we do things.

As all forest systems face increasing volatility, forestry organisations are increasingly shifting towards resilience thinking. International organisations such as IUFRO[10] and FAO[11] have published resilience-focused guidelines, government agencies have published resilience roadmaps (see the Scottish case study below), while forestry companies are increasingly incorporating resilience principles into their strategic planning.

Case Study – A routemap to resilience in Scottish forestry

Climate change is at the centre of government policy in Scotland. The Scottish Government's response to the UK Climate Change Risk Assessment 3 was to develop a National Adaptation Plan (2024 – 2029). Preparation and delivery of Scottish Forestry's Routemap to Resilience[12] was undertaken as part of this plan.

The routemap includes a resilience framework which sets out how to achieve more resilient forests and woodlots in Scotland, outlining priority actions over the next ten years. The framework has four elements:

- **Resistance** - reducing threats
- **Adaptation** - active change to reduce future impacts
- **Response** - taking action when threats occur
- **Recovery** - enabling woodlands to recover.

Sitka spruce covers 43% of Scotland's plantation forestry area and is the primary source of timber harvest. This creates significant vulnerability to climate risks and pests. The creation of an evidence-based list of productive future species is a key part of the Scottish strategy. This includes both commercial and native species selected against multiple criteria including climate suitability, pest resistance and wood properties. The routemap recognises that ecosystem health, including soil systems and biodiversity, forms the foundation of forest resilience.

Rather than reacting to each climate threat individually, Scotland is taking a strategic approach by developing scenarios of potential future impacts and using these to inform planning at all levels. This approach allows for better preparation and more efficient resource allocation. It helps convert abstract climate risks into practical management decisions and creates a common understanding of potential futures.

The routemap recognises that a significant barrier to implementing resilience measures is the lack of knowledge or experience among forest managers about alternative species and practices. It also includes knowledge exchange initiatives including demonstration sites, a practitioner forum and focused training on managing diverse species and silvicultural approaches.

The need to improve seed and seedling supply systems for a wider range of species, including seed stands, collection, processing and nursery production is also explored. Without reliable seed supply chains and improved genetics, diversification efforts will be limited. Economic analyses of alternative species and investigations into product opportunities to ensure that diversification is economically viable are also being undertaken. From a carbon perspective, the plan balances immediate carbon storage with long-term resilience.

Scotland is also taking a pre-emptive approach to major biotic and abiotic threats by putting plans in place before a crisis occurs.

The routemap was developed collaboratively across government, industry, environmental NGOs and research organisations, ensuring buy-in from key stakeholders and improving the success of implementation plans.

The Scottish routemap is an excellent example of how to implement a resilience framework. But with approximately 30% of the forest estate under public ownership, as both a major forest owner and a regulator, the Scottish Government is better positioned to implement the recommended measures.

6.2 Applying resilience in New Zealand forestry research

The Forest Research Committee has now adopted a framework based on five pillars of resilience:

- economic
- ecological
- technological
- social/cultural
- political/regulatory.

The five pillars will withstand changing contexts and are used to provide a useful high-level way of thinking which can encompass a wide range of activities and encourage interconnected rather than siloed thinking. Actions can evolve beneath each of the five pillars.

Resilience Area	Economic	Ecological	Technological	Social / Cultural	Political / Regulatory
Focus	Profitability	The future estate	Innovation capacity	Social licence	Ability to operate
Key Actions	Enhancing productivity, diversifying markets	Improving ecosystem recovery ability	Leveraging tech for better decisions	Considering community needs, partnerships	Co-developing regulations, integration
Examples	Addressing margin pressure	Encouraging diverse species composition	Investing in research and innovation	Engaging in participatory decision-making	Responding to changing regulations

Figure 4: A framework based on five pillars of resilience.

> *"Traditional risk management focuses on planning and reducing vulnerabilities. Resilience management puts additional emphasis on speeding recovery and facilitating adaptation. True resilience isn't about managing a particular instance of risk but being ready for anything through the way you operate."*
>
> **Ian Hinton, Strategy and Innovation Manager, Timberlands Ltd/Chair of the Forest Research Committee**

6.3 The case for change within a resilience framework

The consultation has clearly shown that the New Zealand forestry industry needs to change. There was broad consensus across all stakeholder groups that while radiata will continue to be a significant component of the forestry landscape, the current forestry industry lacks resilience across all five resilience pillars. The industry needs to diversify, requiring strategic foresight, collaboration and innovation.

Table 4 provides an overall summary of the case for change, combining consultation findings with the above resilience framework. Applying this resilience framework will mean that research proposals submitted to the Forest Research Committee will now be evaluated based on their potential contribution to one or more resilience pillar.

Table 4: Combining the consultation findings with the resilience framework. (See Appendix 4 for a more detailed discussion of each resilience area.)

Resilience area	Commentary
Economic	With the current downturn in the industry, the predominant business model is becoming uneconomic for some players. Reliance on limited commodity markets (e.g., logs to China) exposes the industry to risk. Adding further local processing and new export opportunities, both within radiata and with other species, would significantly improve economic resilience.
Ecological	The current radiata monoculture, with a large clearfell regime, can lead to erosion, slash movement and infrastructure damage in certain topographies. Climate change could potentially have a disproportionate impact on a monoculture.
Social / cultural	Forestry and wood processing are important employers, especially in some regions, and need to be sustained. There is currently a negative perception toward the forest industry within some parts of society, particularly from the farming community. This is concentrated toward the monoculture and large clearfell components of the industry. By introducing new regimes for radiata and other species and possibly retiring some areas from commercial forestry, the reputation for forestry as an industry could be improved.
Technological	The over-representation of radiata, with its limited markets, has constrained the investment into technology innovation for other products from radiata as well as products from other species.
Political / regulatory	The current OIO process and ETS rules are preventing overseas investors from funding forestry opportunities in radiata and other species. Codes and standards as well as building regulations can make it difficult to use another product or species away from the mainstream.

R&D priorities 7

7.1 Multiple suggested pathways

The consultation process did not identify a clear pathway forward to build a resilient forestry industry.

Multiple approaches were suggested including:

- putting all our resources into protecting radiata
- developing radiata and a contingency species
- adding one alternative species at a time as resourcing permits
- targeting three species for each region to get to scale locally.

7.2 Short-term projects identified through the consultation process

In September 2024, to maintain momentum towards diversification in the short-term, the Forest Research Committee recommended an interim programme to provide a sound basis for developing a comprehensive, long-term programme. It encompassed four key aspects:

- **Megatrend analysis**—given the significant current global instability and long development time for new forestry models and product pathways, a thorough analysis of potential future scenarios should be carried out before significant investment into a large new diversified forestry programme is developed.
- **Spatial mapping of species other than radiata pine** — given any future forestry models beyond the current single age, clear-fell, radiata pine regime will require more specific matching of species to site and linking of resource to processing, spatial mapping will be essential. Investment into Scion's ForestInsights[13] platform would expand the focus beyond radiata to other exotic species, maintaining momentum while the megatrend analysis is completed.
- **A comprehensive literature review to establish what is already known about species other than radiata pine** — there has been a significant body of work undertaken in New Zealand on species other than radiata pine. A comprehensive literature review should be undertaken to understand and document what information already exists for alternative species, particularly in the Scion archives. The consultation provided a consistent and very strong message: *"Do not reinvent the wheel"*.
- **Support species other than radiata pine with existing strategies** — there has been significant investment to date in various species such as the durable and non-durable eucalypts, cypresses and redwoods. A continuing baseline level of support should continue for at least those species, where published strategies exist, until a new programme is finalised.

At the time of writing, all but the spatial mapping project have been supported either through the Forest Growers Levy Trust, or Te Uru Rākau, or both.

7.3 Longer-term projects identified through the consultation process

Beyond the projects recommended above, the consultation process identified several other opportunities which could be considered once the megatrend analysis has been completed. These are summarised in Table 5 (next page).

7 R&D priorities cont.

Table 5: Summary of potential research areas arising from the consultation.

Research area	Discussion
Contingency species for radiata	There has been a clear need expressed to identify a contingency species for radiata which can grow over the same range and slot into the existing wood processing infrastructure and markets. Best-bet species identified through the consultation process were: • grand fir (*Abies grandis*) • pine hybrids • Norfolk Island pine (*Araucaria heterophylla*). This work should build on work already undertaken on contingency species.
New forestry models	The industry needs to understand the economic, environmental and social drivers of other forestry models (including alternative species and new harvesting systems) for both radiata and other species: • mixed species regimes • continuous cover regimes • permanent cover regimes • forestry integrated with farming. **Research areas:** • Map all forests for risks (erosion, climate change, pests/disease, wind, flood, sea level rise). This can be linked to the Scion ForestInsights platform[13]. • Develop spatial log supply models, link to existing processing capacity (this can also be linked to the ForestInsights platform). • National network of trials with a range of objectives.
Shorten radiata rotation age	Reducing the rotation age while maintaining wood and fibre quality would reduce the risk to and improve the economics for radiata pine. The consultation identified a clear desire to maintain the structural component of the log to underpin economic returns while extracting more value from the whole log. **Research areas:** • Developing new products from young radiata logs.
New high-value products/markets	Industry should explore what innovations are occurring internationally with the use of wood fibre (then match back to fibre characteristics and site requirements identified for selected contingency species. **Research areas:** • Expand the product range for both radiata and other species to high-value products. • Futures analysis to determine what markets might be in 30 – 50 years' time (building on the megatrend analysis). • Whole tree utilisation.
Support cooperation / consolidation amongst small growers	Establishing scale in the current environment is about confidence in the species, but also providing growers and processors with the confidence to invest. Although ultimately scale will only be achieved when large growers start to plant, aggregating and increasing current small blocks to provide larger scale is a good first step. For example, Mosaic Aotearoa[14] hold a forest register which enables growers to link with markets. They are 'creating a thriving market for special purpose timbers' by 'connecting your forest to the local market for high-value timbers'. The need for consolidation activities was a strong theme in the consultation process.

Prioritising where to next 8

The Forest Research Committee (FRC) is responsible for managing the Forest Growers Levy Trust investment into the overall research portfolio. An FRC subcommittee met to discuss the best way forward for diversification research given the many potential directions.
There was a consensus that the approach should deliver benefits to forest growers, balancing immediate actions with a long-term strategic vision. The recommended path was to take a pragmatic approach in the first instance — for example, focusing on alternative species about which most is known such as certain cypresses, eucalypts and redwood — while maintaining a global perspective to identify how diverse species could be integrated. It was agreed to first clarify the purpose and direction and then develop a detailed plan as knowledge and confidence grew.

It is considered important to add value in New Zealand rather than continue the current rate of log exports. The product types that could help improve margins for growers, while maintaining options and flexibility, are as follows:

1. solid timber
2. engineered wood products - e.g. LVL, CLT etc.
3. packaging
4. textiles
5. energy
6. biochemical, oil replacement
7. recreation/environment.

The fibre characteristics that make a species more valuable to the forest grower, not just the processor, must be understood. Product manufacturers need wood fibre costs to be no more than 25-30% of their total input costs; meanwhile, growers need a fair return for their investment in producing the fibre.

Priority research issues identified by the Forest Research Committee

The FRC identified multiple challenges to be addressed when considering future diversification research:

1. margin: cost, revenue and logistics
2. pests and diseases
3. physical threat (wind, rain, erosion, climate)
4. market concentration: timber for construction, logs to China, pulp
5. dominance of a monoculture
6. social licence to operate
7. processing/value chain constraints
8. timelines: to revenue, to react to an issue
9. the value impact of variable wood quality
10. lack of integration in the industry
11. New Zealand's isolation/low population
12. our continued ability to export logs.

The next step is to address each major issue and analyse how diverse species and/or regimes can integrate to produce a more resilient product suite—based on performance. This will be done using the 'Swiss Cheese' method (Figure 5), where each issue represents a layer of cheese and the optimal solutions align with the majority of holes. This will help to determine which of the longer-term projects identified through the consultation process will form the basis of the new forest diversfication research programme.

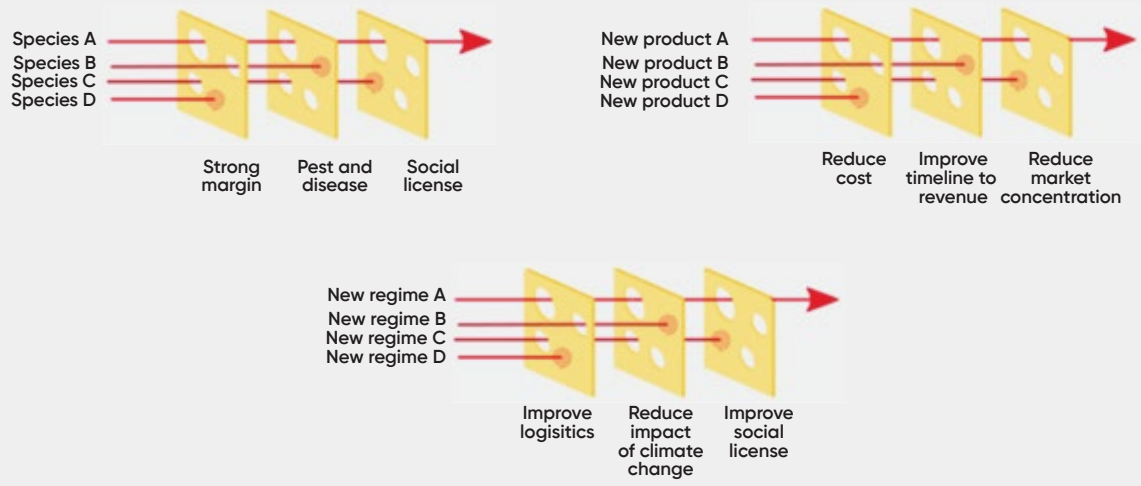


Figure 5: The Swiss Cheese approach.

Appendix 1:
Who we consulted

At least one person from each of the companies and organisations listed below was interviewed. Most interviews were undertaken in person (in Rotorua, Tauranga, Auckland, Wellington, Nelson, Marlborough and Christchurch) with the remainder carried out virtually.

Interviewers were Marco Lausberg and Alison Slade (Forest Growers Research) and Russell Dale (independent consultant).

Company	Sector group
Timberlands Ltd	Forest Growers (large)
Forest Management Group	Forest Growers (large)
Ngā Pou a Tāne	Forest Growers (large)
PF Olsen Ltd	Forest Growers (large)
Rayonier-Matariki	Forest Growers (large)
Manulife	Forest Growers (large)
One Forty One	Forest Growers (large)
Tasman Pine Industries	Forest Growers (large)
Port Blakely	Forest Growers (large)
NZ Carbon Farming	Forest Growers (large)
Ernslaw One	Forest Growers (large)
Forest Owners Association	Forest Growers (large)
Radiata Pine Breeding Company	Forest Growers (large)
Farm Forestry Association (4 individuals)	Forest Growers (small)
NZ Dryland Forests Innovation/Marlborough Research Centre	Forest Growers (small)
Kingheim Forests	Forest Growers (small)
Forestry consultant	Forest Growers (small)
NZ Redwood Company	Forest Growers (small)
Ministry for Primary Industries	Timber processing/utilisation
Stevens Lawson Architects	Timber processing/utilisation
Abodo	Timber processing/utilisation
Offsite NZ	Timber processing/utilisation
Nelson Pine Industries	Timber processing/utilisation
Irving Smith Architects	Timber processing/utilisation
Timber Unlimited	Timber processing/utilisation
Kāinga Ora	Timber processing/utilisation
Taranaki Pine	Timber processing/utilisation
Oji Paper	Timber processing/utilisation

Company	Sector group
Redstag	Timber processing/utilisation
Juken NZ Ltd	Timber processing/utilisation
DANA	International investment
Rohatyn Group	International investment
Follium Capital Partners and Pinoli	International investment
Margules Groom	International investment
INDUFOR	International investment
Proseed/Ngāi Tahu	Māori interests
Ngāti Tuwharetoa	Māori interests
Ngā Pou a Tāne	Māori interests
Ministry for Primary Industries (2 individuals)	Government
Climate Change Commission	Government
GS Consultation	Government
Parliamentary Commission for the Environment	Government
Forest and Bird	NGO
Land Use Consultant	Forest-growing research and development
Scion (2 individuals)	Forest-growing research and development
School of Forestry – University of Canterbury	Forest-growing research and development
Biosecurity consultant	Biosecurity
Te Tira Whakamātaki	Biosecurity (+ Māori interests)
Forest Owners Association	Biosecurity
Scion	Bioenergy
Bio Energy Association NZ	Bioenergy
Scion	Biomaterials
Marlborough Wine Growers	Other sectors
Plant and Food - Viticulture	Other sectors
Foundation for Arable Research	Other sectors
Pāmu/Landcorp	Other sectors

Appendix 2:
Alternative & contingency species

Table A1: Species identified during the consultation process as having potential to become part of New Zealand's forestry resource. (N.B: Characteristics and products are as identified by stakeholders.)

Species	Common names	Characteristics	Potential products
Exotic species			
Abies grandis	**Grand fir**	• Potential contingency species • Shade-tolerant, suited to continuous cover forestry • Wind-hardy • Better for environmentally friendly harvesting systems	Pulp, framing timber, decorative panelling
Abies spp.	**Firs**	• Shade-tolerant, suited to continuous cover forestry • Wind hardiness • Cold climate adaptation	Construction, musical instruments, paper
Araucaria heterophylla	**Norfolk Island pine**	• Potential contingency species for radiata pine • Compatible with existing timber treatment and processing • Minimal wilding risk • Suitable for continuous cover	Furniture, plywood, decorative veneer
Cedrus deodara	**Himalayan cedar**	• Class 1 durability	Construction timber, furniture, carvings
Chaemocyparis ovensii	**Ovens cypress**	• Cypress hybrid	Similar to macrocarpa – joinery, exterior uses
Cryptomeria japonica	**Sugi**	• High-value timber • Existing international timber market • Premium market positioning	Cladding, joinery, traditional Japanese construction
Cunninghamia lanceolata	**Chinese-fir**	• No issue in importing seed • High stocking rate (can grow into long standing poles) • Potentially short rotation (20 years) • Good strength • High durability above ground • Narrow crown (grow next to paddocks) • Good high-value market in China	General construction, panelling, outdoor uses

Species	Common names	Characteristics	Potential products
Exotic species			
Cupressus lusitanica	**Lusitanica**	• Fast-growing • Tolerates warmer climates • High-quality timber production • Premium market potential	Exterior cladding, joinery, decorative uses
C. macrocarpa	**Macrocarpa**	• Fast-growing • Naturally durable, high-value timber • Existing domestic timber market • Well-established domestic supply chains • Premium timber with strong Asianmarket demand • Class 2 durability (15-25 years in-ground)	Furniture, panelling, joinery, outdoor structures
Eucalyptus bosistoana	**Coast grey box**	• Fast-growing • Drought tolerance • Class 1, naturally durable, high-value timber • Alternative to CCA-treated radiata pine • Can tolerate some challenging sites	Decking, outdoor structures, flooring, posts and poles
E. fastigata	**Brown barrel or cut-tail**	• Fast-growing • Good timber/fibre opportunities • Most adaptable eucalypt (referred to as "radiata of eucalypts") • Tolerates wide range of sites	Structural timber, flooring, furniture
E. globoidea	**White stringybark**	• Fast-growing • Drought tolerance • Naturally durable, high-value timber • Alternative to chemical treatment	Joinery, flooring, general construction
E. laevopinea	**Silvertop stringybark**	• Cold tolerant • Naturally durable	Flooring, decking, heavy engineering applications
E. microcorys	**Tallowwood**	• Naturally durable	Decking, flooring, marine and outdoor uses
E. muelleriana	**Yellow stringybark**	• Naturally durable	Flooring, joinery, structural timber

Appendix 2 cont.

Species	Common names	Characteristics	Potential products
Exotic species			
E. pilularis	**Blackbutt**	• Fast-growing • High-value appearance timber potential • Suitable for external uses	Flooring, decking, structural and appearance timber
E. saligna	**Sydney blue gum**	• Fast-growing • Moderately naturally durable timber • High-value timber applications	Framing, flooring, veneer, plywood
Picea spp.	**Spruce**	• Shade tolerance for continuous cover • Wind hardiness • Cold climate adaptation	Construction, musical instruments, paper
Pinus spp.	**Southern pines (US/Aust/SA)**	• Genetic diversity for breeding • Climate adaptation potential • Disease resistance breeding material	Framing, treated poles, plywood, pulp
Pinus spp.	**Pine hybrids**	• Potential contingency species • Disease resilience opportunity • Exploration of hybrid vigour	General construction, pulp, treated timber
Pinus attenuata hybrids	**Radiata and Knobcone pine hybrid**	• Potential contingency species for radiata pine • Combines drought, snow and frost tolerance • Suitable for high-country areas too cold/dry for radiata • Replacing Douglas fir in wilding-prone areas	Structural timber, framing, pulp
P. caribaea	**Caribbean pine**	• Potential contingency species • Climate resilience potential	Framing timber, treated posts, pulp
P. elliottii	**Slash pine**	• Potential for fast growth rates • Potential improvements to climate resilience	Poles, structural timber, treated products
P. pinea	**Stone pine**	• Produces a crop • Potential for carbon credits (not permitted at present)	Nuts (pine nuts), occasionally furniture

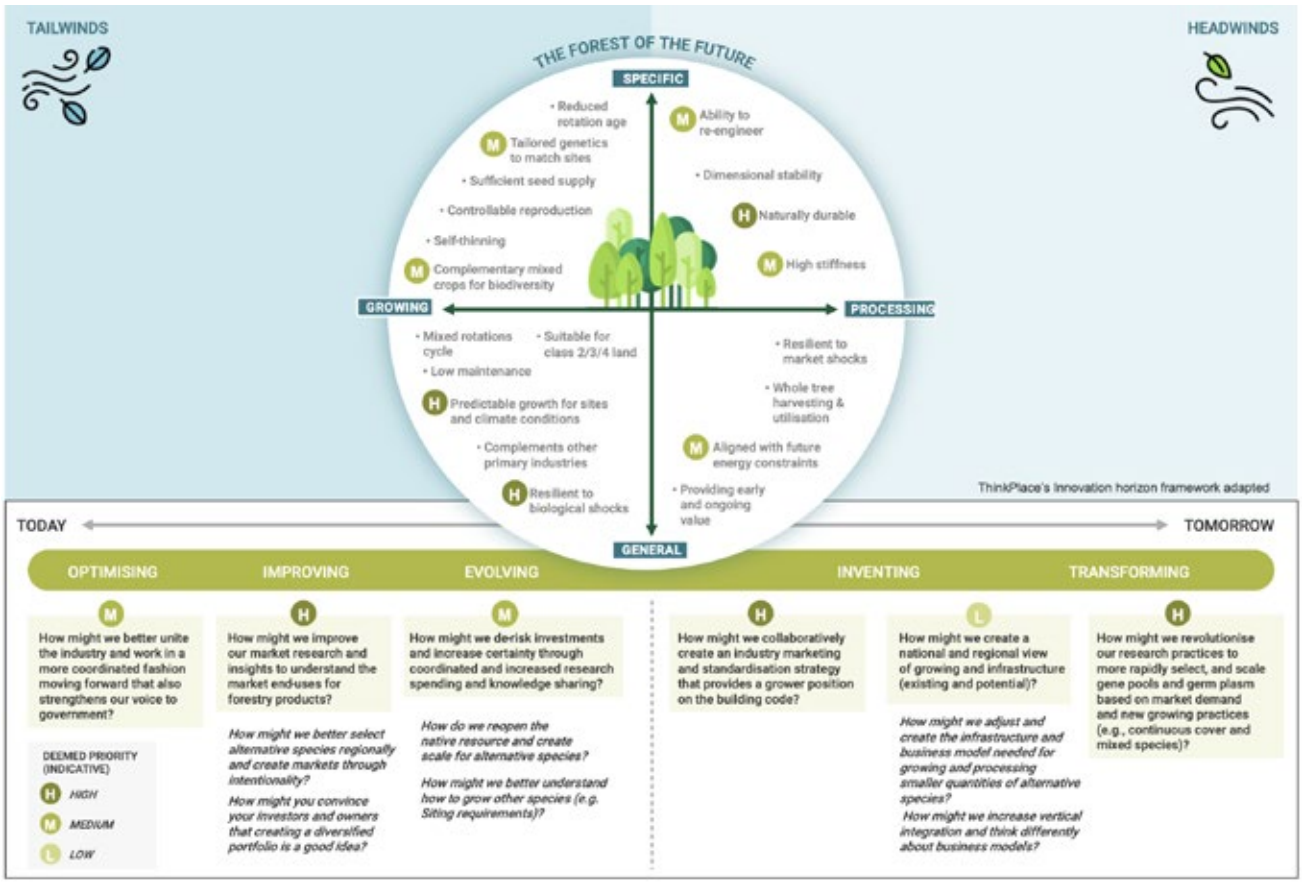
Species	Common names	Characteristics	Potential products
Exotic species			
P. radiata (short rotation)	**Monterey pine**	• Known silviculture • Proven markets • Short rotation for biomass/ bioenergy	Framing, panels, pulp, furniture components
P. taeda	**Loblolly pine**	• Potential contingency species • Climate adaptation potential	Pulp, structural timber, engineered wood products
Populus spp.	**Poplar**	• Rapid extensive root systems for soil binding • Erosion control (70-95% reduction) • Integration with pastoral farming • Multiple revenue streams (timber, fodder, shelter) • Carbon sequestration potential	Plywood, packaging, furniture, biomass
Pseudotsuga menziesii	**Douglas-fir**	• Silviculture/growth well-known • Existing domestic timber market • Grows in cooler climates than radiata pine • Potential contingency species	Structural timber, flooring, framing
Sequoia sempervirens	**Coast Redwood**	• Fast-growing • Low disease/pest risk • Long-lived • High-value timber • Existing international market • More productive than radiata in suitable areas • Superior carbon sequestration in northern areas	Outdoor furniture, cladding, decking

Appendix 2 cont.

Species	Common names	Characteristics	Potential products
Native species			
Agathis australis	**Kauri**	• High cultural and ecological value • Alternative revenue potential (tourism, cultural) • Long-term carbon storage	High-end furniture, boat building, veneers
Dacrydium cupressinum	**Rimu**	• High-value native timber • Cultural and ecological significance • Long-term carbon storage • Sustainable harvest potential	Furniture, flooring, interior panelling
Lophozonia/ Fucospora spp (formerly Nothofagus spp)	**Native beeches**	• Naturally durable timber • Suitable for continuous cover harvesting • Low-volume sustainable harvest maintaining environmental values	Flooring, furniture, veneer, cabinetry
Podocarpus totara	**Tōtara**	• High-value native timber • Cultural significance (especially for Māori) • Long-term investment potential • Experimental harvesting showing promise • Strong root systems for erosion control	Carvings, furniture, joinery, specialty timber
Prumnopitys taxifolia	**Matai**	• High-value native timber • Cultural significance • Long-term investment potential	Flooring, interior joinery, furniture
Vitex lucens	**Puriri**	• High-value native timber • Cultural significance • Long-term investment potential	Flooring, tool handles, furniture, turnery

Appendix 3:
R&D priorities for alternative species

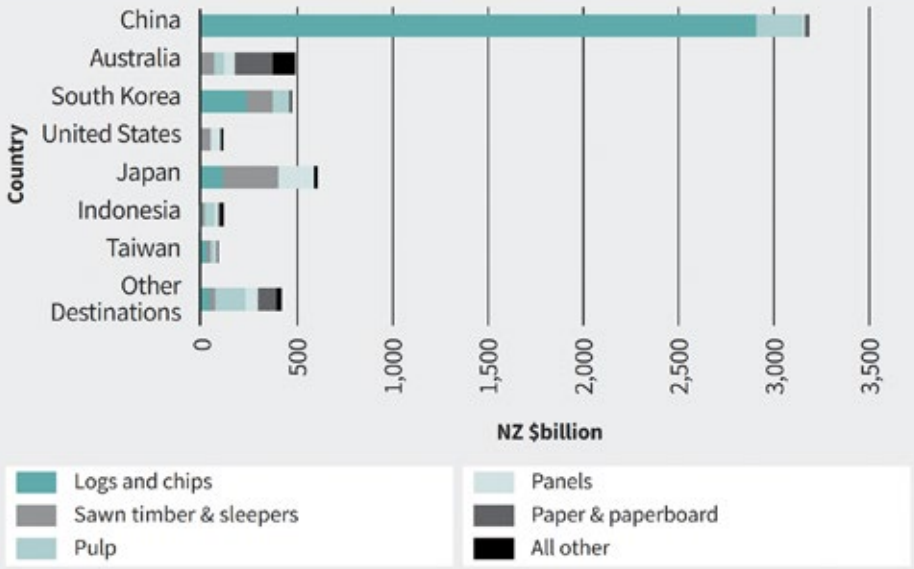
Research and development priorities for alternative species determined in an industry workshop. (see Section 5.3)



Appendix 4:
Resilience and the case for change – main issues

Here we provide a summary and some examples of some of the main issues for the forest industry under each of the five pillars of resilience – economic, ecological, social and cultural, technological and political.

A4.1 Economic resilience

Issue	Discussion
Our current industry's reliance on a limited range of markets leaves the industry highly vulnerable to market fluctuations and geopolitical instability.	**Limited market diversity** Forest growers produce three main product types: export logs, sawlogs and residues. Because they are interconnected, if one market declines, this impacts the rest of the supply chain. China is our single biggest market, taking 20 million m³ of logs per annum (around 60% of the national harvest volume). New Zealand is highly exposed to the Chinese log market as our domestic processing capacity cannot process the logs onshore during a log export downturn. With the Chinese economy in decline, traders are now buying less sawlog and lumber, causing a slowdown in the global timber market[15].  *Fig A1: New Zealand's key wood product export markets.* India had been identified as a potential growing market for manufacturers and exporters. However, Indian traders are now buying far less lumber, roundwood and furniture as the country's previously booming real estate economy is slowing down[16].

Issue	Discussion

Limited capacity to process onshore

New Zealand's capacity to process logs onshore is limited and production is either static (sawn lumber, fibre board) or decreasing (pulp, paper, particle board, veneer and plywood).

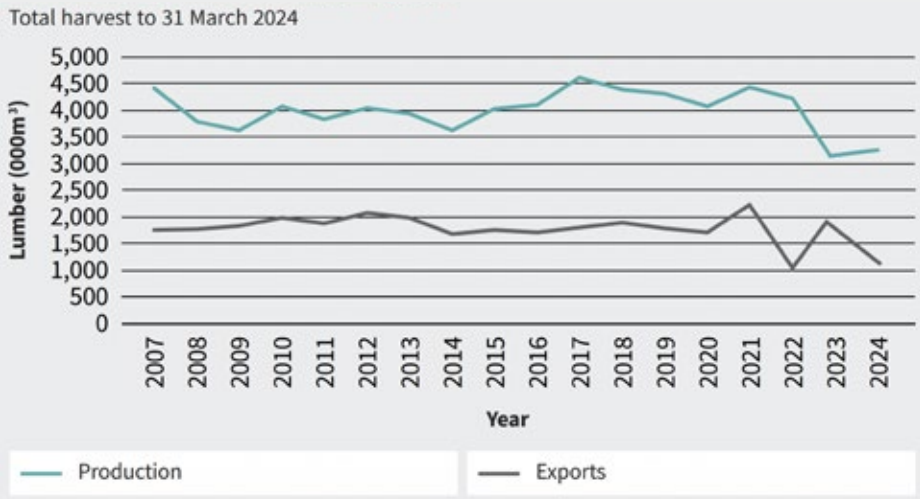


Fig A2: Lumber production and exports.

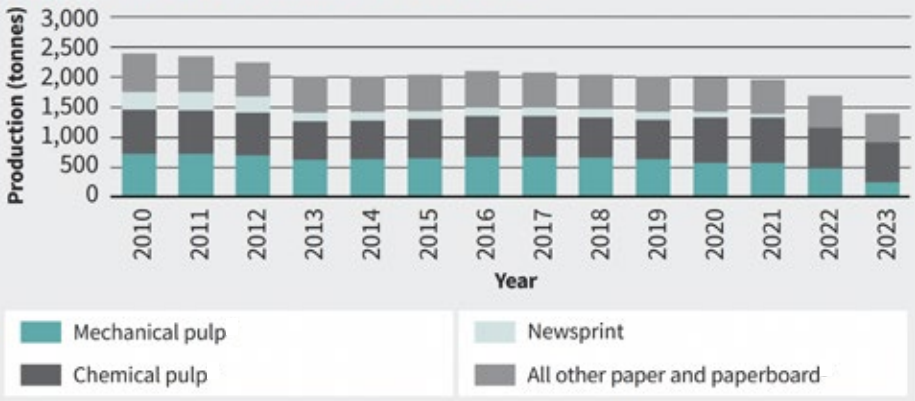


Fig A3: Pulp and paper production (noting the scale should be 000 tonnes).

Appendix 4 cont.

Issue	Discussion

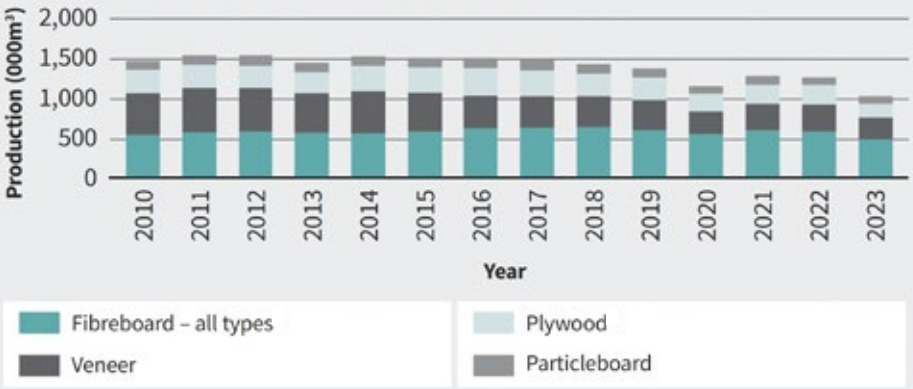
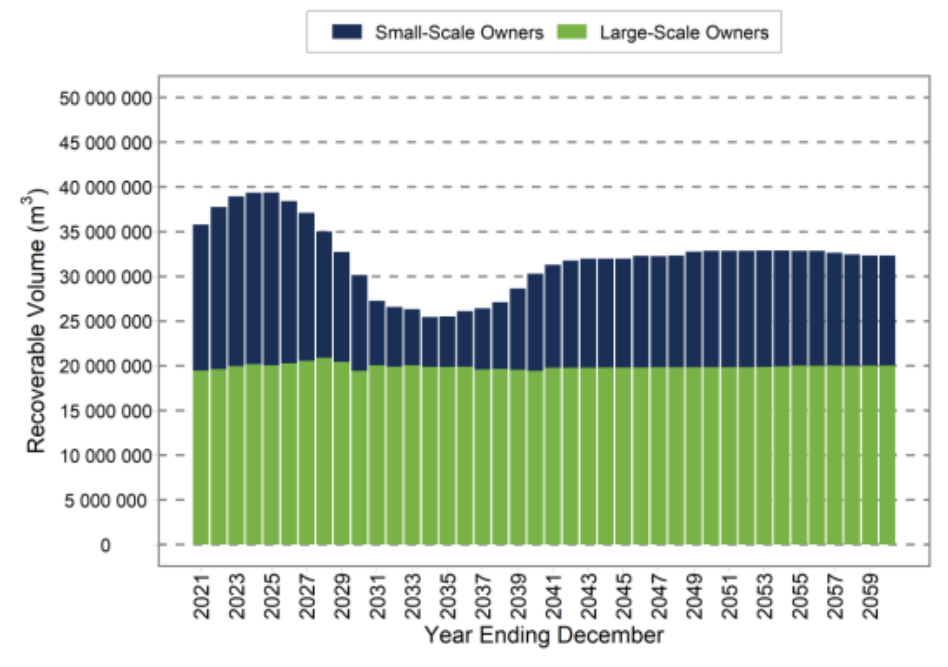


Fig A4: Fibreboard, particleboard, veneer and plywood production.

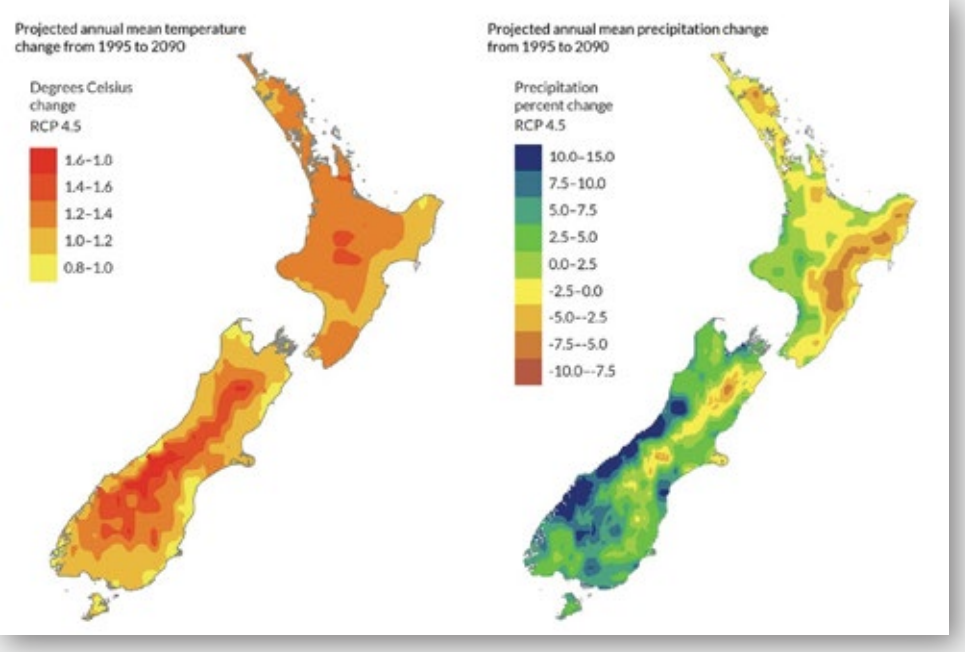
Current processing capacity is also under threat because of rising costs (particularly electricity). This may have a significant impact on residue utilisation which has already been impacted with the closure of the Norske Skog Mill in 2021 (newsprint manufacture), the Winstone Pulp Mill in 2024 and Oji Fibre Solutions' Kinleith paper manufacturing plant in 2025.

Issue	Discussion
	 People 'already moving out of town' as mills look to close operations RNZ 29 Aug, 2024 03:32 PM 3 mins to read Save Share Ohakune Whanganui 4 4 National Park A Raetihi business owner says the town has been much quieter since the mill announced its plans to close. Photo / NZME Engineered wood products increase the product value and range, but do not provide increased returns to growers. **NB:** It is challenging to slot another species into the supply chain. Few species are as versatile as radiata in terms of range, yield, relatively good disease resistance, market penetration and economic return. A contingency species for radiata pine doesn't necessarily alleviate market risk but would provide continuity should a significant pest or disease incursion occur.
The profitability of the current industry is marginal.	The profitability of the industry has been decreasing over recent years due to higher costs and lower revenues; log prices have been volatile in recent years. A recent analysis carried out for the Environment Committee showed that profitability for eight major forestry companies in New Zealand had fallen significantly, with five companies showing a loss in 2022. The radiata recoverable volume (around 2030 to 2040) is predicted to decrease (Fig A5) [17], driven primarily by the volume expected to come from small-scale forest owners. To bridge this shortage, alternative product options are needed for young radiata. Other shorter rotation species also have the potential to address the shortage if planted now (e.g., eucalypts for naturally durable wood), but lack scale, both in growing and in processing, which means value chains for other species have failed to reach/retain the critical mass required to de-risk investment. Part of the problem is that it is difficult to connect growers and markets when the resource is scattered in location and ownership.

Appendix 4 cont.

Issue	Discussion
	 *Fig A5: Predicted radiata recoverable volume to 2060.* Engineered wood products increase the product value and range, but do not provide increased returns to growers. Costs are continually increasing across the supply chain. For example, global shipping rates have nearly doubled since late April but fortunately remain well below the peak reached during the COVID-19 pandemic[18].
International forest ownership disincentivises diversification.	Fifty-seven percent of New Zealand's forests are owned by international companies. They invest in radiata in New Zealand because radiata grows very well, has historically been very profitable, with significant infrastructure supporting this species. Radiata represents only a small part of the diversification in their portfolios. There is no incentive for them to diversify into other species.

A4.2 Ecological resilience

Issue	Discussion
Climate change will impact the growth ranges of existing commercial species.	**Temperature Changes** By 2050, 96% of the plantation area in New Zealand is expected to experience mean annual temperatures above 13°C (Fig A6). Around 21% of the plantation area may see mean annual temperatures above 17°C, which is near the upper limit of the optimal temperature range for radiata pine growth. However, South Island forests may become more productive as temperatures increase[19,20].  *Fig A6: Projected annual mean temperature and precipitation changes to 2090 under RCP4.5[21].* **Productivity changes:** By 2040, radiata pine productivity may increase by about 10%, potentially doubling to 20% by 2090. But production loss through increased disease (e.g., red needle cast), pests, fire and extreme weather events could counter this productivity advantage.
Our almost complete reliance on a single species leaves us vulnerable to biotic threats.	New Zealand has been fortunate that significant incursions have been either intercepted at the border or mitigated. Incursion risk significantly increases with climate change. Some examples of incursions occurring in commercial forestry estates internationally and the economic impacts, are given in Table A2.

Issue	Discussion
Climate change will significantly increase pest and disease incursions.	*Table A2: Three examples of the effect of significant incursions in forestry internationally*

Country	Causal organism	Biological impact	Economic impact	Speed of impact
Spain	Brown Spot Needle Blight (Lecanosticta acicula)	Up to 60% mortality in affected radiata pine stands	Tens of millions of euros annually	Severe impact within 5-7 years of detection. Can kill seedlings within weeks and mature trees within a few years.[25]
British Columbia, Canada	Mountain Pine Beetle (Dendroctonus ponderosae)	Affected over 18 million ha of pine species in Canada	$55 billion CAD (BC)	Major outbreak lasted about 15 years (late 1990s to mid-2010s); trees typically died within 1 year of successful attack.[23]
Germany	European Spruce Bark Beetle (Ips typographus)	171 million m^3 damaged wood removed (2018-2020)	€12.7 billion (2018-2020)	Outbreak intensified over 3-5 years; mass attacks can kill trees within weeks.[24]

Currently, there is no obvious contingency for radiata pine. For example, based on the Spanish experience, should Brown Spot Needle Blight establish in New Zealand, the entire estate could be impacted within a five-year period. [25]

Climate change will significantly increase the frequency and intensity of extreme weather events and wildfires.

As the frequency and intensity of climate events increases, the radiata estate's relatively long rotation and current age-class distribution are exposing some forests to an increasing level of risk. More slash also now needs to be removed from harvest sites. New Zealand needs economic uses for the residues.

Radiata pine plantations are also increasingly being extended onto marginal land which may become more vulnerable as the climate changes.

Slash impacts

The large-scale clear-fell radiata regime leaves a window of vulnerability during which slash can cause damage to both the environment and the industry's social licence.

Issue	Discussion

Tolaga Bay farmer seething as forestry slash causes floodwaters to swamp house, land again

1:32 pm on 15 February 2023

Share this

Sally Murphy, Reporter
@SallyMu53651115 sally.murphy@rnz.co.nz

Wind damage The image below is Scion's Rangipo Accelerator Trial, post-Cyclone Gabrielle.

Fire risk "Very-extreme" wildfire weather conditions, similar to the 2019/2020 Australian bushfires, have already occurred in Aotearoa New Zealand. [26]

A4.3 Social and cultural resilience

Issue	Discussion
Resistance to change	Despite the current downturn in the industry, our consultation showed that companies are reluctant to move away from the current model and risk investing in different species or forestry models.
Licence-to-operate issues regarding radiata pine are limiting expansion.	Poor perceptions of radiata pine are clouding the whole industry. There has been a lot of misinformation, particularly in relation to Cyclone Gabrielle, in the media. This has resulted in a very strong anti-pine sentiment in some communities. Potential spread via wildings is also a legitimate issue. Wilding conifers cover more than 1.8 million hectares of New Zealand. Despite control efforts they are spreading at an estimated rate of 5% a year[27]. There is however potential to manage wildings for production[28].
Farmers do not consider forestry to be a legitimate land use.	Forestry is a legitimate land use. New Zealand needs forests. However, the dairy/sheep and beef sectors have strong lobbying programmes which discount forestry as an acceptable and economically viable land use on farms (which inevitably spills over into a community view). Forestry doesn't have such a strong voice. The research released by Our Land and Water[29], despite painting a positive story for forestry, was represented quite differently (and negatively) by the sheep and beef sector. This has been followed by the SOS campaign through Federated Farmers (Save our Sheep).

Save our sheep billboards hit Wellington

Federated Farmers
June 4, 2025

Federated Farmers launch bold campaign to stop sheep farms being replaced by carbon forestry.

Federated Farmers' digital billboards are positioned carefully to stare at Ministers in their Beehive offices.

Issue	Discussion

Business.Scoop
SCOOP INDEPENDENT NEWS

Scoop Werewolf Wellington Business Pacific Comm

Home Agriculture Finance Transport ICT Economy

BUSINESS > PRESSRELEASE

Pine Tree Report 'Reads Like A Horror Story' For Farmers

August 22, 2024

Press Release – Federated Farmers

Federated Farmers say the 'Why Pines?' report released today by the Our Land and Water National Science Challenge should serve as a major wake-up call for the Government.

"It may have been published as a report, but it reads more like a horror story for New Zealand's farmers and rural communities," says Federated Farmers meat & wool chair Toby Williams.

"The study makes it very clear that under the current policy settings we will continue to see millions of hectares of productive farmland plastered in plantation pine trees.

"Planting pine trees as far as the eye can see may well help reduce emissions or improve water quality, but somebody has to ask the question – at what cost?

I can tell you; it will come at the expense of rural communities, food production,

A4.4 Technological resilience

Issue	Discussion
We are not prepared to respond to a significant incursion or change in market.	While much research has been done on the growing and processing of alternative species, the information is scattered and incomplete. We have insufficient resources (funding, people, infrastructure) to focus on more than one or two species beyond radiata. We don't have access to germplasm at scale for species. We don't have the information to match fibre characteristics to product to species to site to environment.
The range of options beyond radiata is almost overwhelming.	Almost the entire forestry industry (growing and processing) is geared towards radiata after 100+ years of research and development into the species. Over time, it has replaced the majority of plantings of other species carried out by the Forest Service.  30 Decisions around some new species planted today are for markets up to 50 years from now, although this may be sooner for some short-rotation species such as eucalypts. It is extremely challenging to predict what future innovative/high-value markets for fibre/wood products might be as technological advances are now so rapid. However, fibre will be a key component of a future bioeconomy. Some innovative uses for fibre are summarised in Table A3.

Issue	Discussion

Table A3: Innovative uses for fibre around the world

Product	Innovation	Company
Nanocellulose	Lightweight, strong, versatile material used in packaging, electronics and biomedical applications.	Stora Enso, Sappi, Borregaard
Biodegradable Medical Implants	Implants made from nanocellulose that dissolve in the body, eliminating the need for surgical removal.	Empa
Wood-Based Textiles	Sustainable fibres for clothing, reducing environmental impact compared to traditional textiles.	Spinnova
Biodegradable Electronics	Eco-friendly electronic components that decompose naturally, reducing e-waste.	Biome Bioplastics
Wood-Plastic Composites	Durable and weather-resistant materials for construction and furniture.	Arauco
Bio-Based Packaging	Renewable, compostable packaging solutions that replace fossil-based plastics.	Paptic, Sulapac
Advanced Paper Products	Functional paper with smart capabilities, such as conductivity and interactive features.	Innventia (RISE)
Wood-Based Biochemicals	Renewable chemicals derived from wood, used in biofuels, cosmetics and pharmaceuticals, reducing reliance on petrochemicals.	UPM Biofore, Borregaard
Moulded Pulp Packaging	High-strength, biodegradable packaging for electronics and other fragile goods.	CMPC, Fibria (Suzano)
Water-Resistant Wood Composite	Innovative composite material used in bathrooms and kitchens, offering durability and sustainability.	Woodio
3D Printed Building Components	Large-scale construction elements printed from wood fibres, enabling sustainable and efficient building practices.	MX3D, University of Maine
4D Printed Wood Composites	Smart materials that change shape in response to environmental stimuli, offering dynamic and adaptive properties for various applications.	MIT Self-Assembly Lab

A4.5 Political resilience

Issue	Discussion
National and regional leadership.	There is a lack in national and regional leadership to encourage diverse species planting at scale. A co-ordinated approach is required to develop and implement regional strategies that encourage the planting and future processing of diverse species. In the past, the government played a strong role in diversifying plantings. Once central leadership through the Forest Service was removed in the late 1980s, the economic superiority of radiata has resulted in most stands of species other than radiata being felled and replaced with radiata.
The short political cycle relative to the forestry growing cycle is limiting investor confidence.	With a three-year political cycle, changing political priorities limit certainty for investors. Forestry is a long-term investment requiring significant de-risking.
Overseas Investment Office rules are restricting international investment.	The OIO is a serious impediment to investing in NZ. If the OIO rules were relaxed (not dropped) then the amount of available foreign capital would increase. Anything under $50million is too small to attract an overseas investor and would need to be incorporated into a larger portfolio/strategy. The cost of OIO legal and due diligence requirements can be between $1million and $5million depending on complexity.
Building regulations don't readily support use of other species.	The building sector wants to work with wood but doesn't have confidence in other species. The building regulations are geared to radiata.

Appendix 5: Bibliography

[1] FOA Facts and Figures 2023/24

[2] FOA Facts and Figures 2023/24

[3] https://www.cultivateventures.co.nz/

[4] Different agencies currently operate independently without coordination. For example, DoC manages conservation land, LINZ manages Crown land with different priorities, regional councils may influence land management and foresters are "tearing their hair out" because these fragmented approaches undermine their own land management efforts.

[5] https://pce.parliament.nz/publications/alt-f-reset-examining-the-drivers-of-forestry-in-new-zealand/

[6] Te Ara Whakahou – Ahumahi Ngahere Forestry and Wood Processing Industry Transformation Plan

[7] FGR Contingency Species Workshop summary - available from Forest Growers Research (marco.lausberg@fgr.nz)

[8] FGR Alternative Species workshop summary - available from Forest Growers Research (marco.lausberg@fgr.nz)

[9] Note that the discussion with TUR and MPI identified that the government representative view presented in Table 5 was appropriate 12 months ago, but had now changed.

[10] IUFRO: Forests for Social and Economic Resilience 2025 - English

[11] Building resilience for adaptation to climate change through sustainable forest management:Susan Braatz, Forestry Department, FAO, Rome. braatz.pdf

[12] A routemap to resilience for Scotland's forests and woodlands: Scottish Forestry/The Scottish Government, March 2025 https://www.forestry.gov.scot/publications/forests-and-the-evironment/resilient-forests/1649-a-routemap-to-resilience-for-scotland-s-forests-and-woodlands

[13] Scion - ForestInsights data platform offers wide range of benefits

[14] Mosaic Aotearoa

[15] https://woodcentral.com.au/chinas-timber-imports-sink-as-the-worlds-factory-slows-down/

[16] https://woodcentral.com.au/is-indias-tiger-economy-faltering-timber-imports-in-freefall/

[17] https://www.mpi.govt.nz/dmsdocument/47671-Wood-Availability-Forecast-New-Zealand-2021-to-2060.

[18] Global shipping costs are rising once again – July 2024 | New Zealand Ministry of Foreign Affairs and Trade (mfat.govt.nz)

[19] Watt et al., Assessment of multiple climate change effects on plantation forests in New Zealand, *Forestry: An International Journal of Forest Research*, 92(1) January 2019, Pages 1 15, https://doi.org/10.1093/forestry/cpy024

[20] Ministry for the Environment & Stats NZ (2020). *New Zealand's Environmental Reporting Series: Our atmosphere and climate 2020*. Available from www.mfe.govt.nz and www.stats.govt.nz.

[21] The RCP4.5 scenario is a long-term emissions scenario that aims to stabilize radiative forcing at 4.5 Watts/m2 by the year 2100 without exceeding that value.

[22] European and Mediterranean Plant Protection Organization: https://gd.eppo.int/taxon/GIBBCI

[23] Natural Resources Canada: https://natural-resources.canada.ca/forest-forestry/insects-disturbances/mountain-pine-beetle

[24] Federal Ministry of Food and Agriculture, Germany

[25] A New Zealand forest-industry group visited Spain in November 2024.

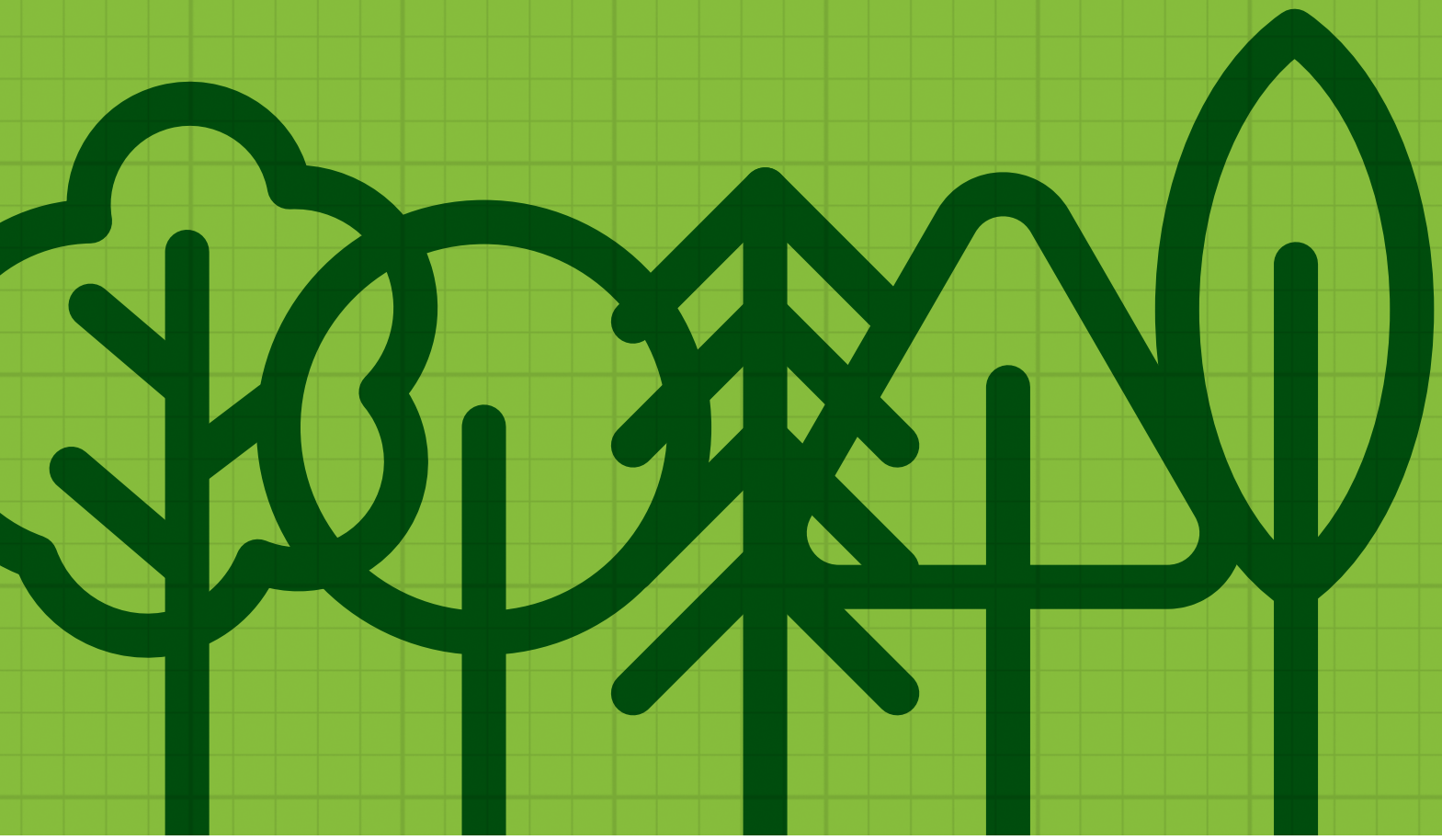
[26] Melia, N., Dean, S., Pearce, H. G., Harrington, L., Frame, D. J., & Strand,T. (2022). Aotearoa New Zealand's 21st-century wildfire climate. Earth's Future, 10, e2022EF002853.

[27] Wilding conifers: Weeds (doc.govt.nz)

[28] Wilding & Co – Making scents of nature

[29] WhyPines-ContextforResearch_OLW_August2024.pdf (ourlandandwater.nz)

[30] FOA Facts and Figures 2022/2023



Ministry for Primary Industries
Manatū Ahu Matua

forestgrowers
levy trust inc

FOREST
GROWERS
RESEARCH