REVIEW OF FORESTRY CORPORATION'S NATIVE TIMBER HARVESTING AND HAULAGE COSTS 1 JULY 2016 – 30 JUNE 2019

Final Report

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The Independent Pricing and Regulatory Tribunal (IPART)

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1 Executive summary

Forestry Corporation of NSW (Forestry Corporation) manages around 2 million hectares of native forests in NSW. These native forests have been harvested and regrown for over a century, providing renewable timber products ranging from fencing palings to flooring, decking and power poles. Forestry Corporation is the major supplier of native timber in NSW and is responsible for sustainable timber production in its native forests.

The efficiency of Forestry Corporation's native timber harvesting and haulage contract costs is important. If costs are too high, Forestry Corporation's sawmill customers will pay too much. But if prices are below cost, Forestry Corporation and/or its harvesting and haulage contractors will not recover their costs. In both instances, inefficient costs have implications for the sustainability of the forestry and wood product manufacturing sectors, which employ over 22,200 people in NSW, including regional NSW.[i]

The *NSW Forestry Act 2012* (Forestry Act) requires:

- Forestry Corporation to review, benchmark and report on its native timber harvesting and haulage costs every 3 years
- IPART to review Forestry Corporation's benchmarking report and make recommendations for reducing these costs.

This is IPART's second review under the Forestry Act. Our first review considered Forestry Corporation's benchmarking report on its native timber harvesting and haulage costs from 1 July 2013 to 1 July 2016. We found that that the native timber harvesting and haulage markets at that time were competitive and that this competition, together with Forestry Corporation's competitive procurement practices, kept costs at a reasonable level.

This review considers Forestry Corporation's benchmarking report on its native timber harvesting and haulage costs from 1 July 2016 to 30 June 2019 (the review period). We found that native timber harvesting and haulage costs were reasonable in the review period, and that there are limited opportunities to achieve further cost reductions.

Two operational changes during the review period – the change to the difficulty class matrix for measuring harvesting rates, and the introduction of the North Haul consortium and central dispatch facility – placed downward pressure on Forestry Corporation's native timber harvesting and haulage costs. However, external factors, such as the 2019–20 bushfires, resource availability and regulatory change, are placing upward pressure on harvesting and haulage costs. While some of these impacts occurred after the review period, they are important context for this review and our recommendations.

These external factors are likely to result in higher harvesting and haulage costs in the next review period. Our recommendations therefore focus on improvements in market efficiency, to reduce costs to the minimum possible cost in the longer term, after accounting for these external influences. They arise from our review of Forestry Corporation's benchmarking report, consultations with government and industry stakeholders, and our understanding of the upcoming challenges and considerations of the forestry industry.

With these challenges and the expiry of North Coast wood supply agreements (WSAs) in 2023 and 2028, it is timely for the NSW Government and Forestry Corporation to consider options to improve the overall efficiency of the native timber industry in NSW. This could include the competitive allocation of native timber, and opportunities to incentivise cost efficiency.

1.1 Forestry Corporation's harvesting and haulage costs are reasonably efficient

Forestry Corporation engaged Indufor to review and prepare a benchmarking report on its native timber harvesting and haulage costs during the review period. Indufor found that:

- Forestry Corporation's costs were reasonable relative to other jurisdictions and indexation benchmarks
- the harvesting and haulage markets were contestable and not exhibiting signs of market power, in local or regional markets
- Forestry Corporation did not appear to fully recover its contract and administration costs during the review period.

We have reviewed the benchmarking report and compared Indufor's findings with our understanding of costs in the review period, as derived from our consultations with government and industry stakeholders and our own analysis. In general, Indufor's findings are consistent with our own.

However, we found evidence of market concentration in most harvesting and haulage markets. In particular, we note that harvesting in the South West region, and haulage operations in the Upper North, Lower North/Central and South West markets, were operating as virtual monopolies during the review period. As such, we disagree with Indufor's findings on the existence of competition in these markets.

We also consider that the North Haul consortium and monopolies in other markets held market power during the review period. However, Forestry Corporation's countervailing market power helped to keep harvesting and haulage costs reasonable.

1.2 Opportunities to improve harvesting and haulage contract cost efficiency

Forestry Corporation's management of native timber harvesting and haulage costs kept rates comparable to indexation increases and jurisdictional benchmarks during the review period. However, we have identified some challenges for Forestry Corporation in managing contract costs and improvements it could make.

During the review period, Forestry Corporation did not recover its harvesting and haulage costs through the delivery charge paid by its customers, which may have reflected the difficulties in forecasting harvesting costs. Following the 2019−20 bushfires, these forecasting difficulties could increase and may also be affected by regulatory changes.

To improve cost transparency and help identify the difference between costs agreed with its customers based on forecasts (reflected in the delivery charge) and actual costs, we recommend that Forestry Corporation provide its customers with:

- data on the components of its delivery charges (i.e. stumpage charge, harvesting and haulage contract charge, and administration charge)
- data comparing the delivery charges, as agreed with customers in a given year, with its actual contract and administration costs in that year.

Greater transparency of this information could contribute to better customer understanding of costs and assist Forestry Corporation's negotiation with customers to ensure costs are recovered through its delivery charges.

Forestry Corporation's management of harvesting and haulage contracts plays an important role in ensuring that costs remain reasonable, and efficient, over time. During the review period, Forestry Corporation directly renegotiated its expired harvesting and haulage contracts with existing contract holders. While contract costs in the review period were reasonable, this may not always be the case, particularly with market concentration in harvesting and haulage markets.

To ensure the market functions efficiently, we recommend that Forestry Corporation go to market for all expired harvesting and haulage contracts, rather than extending contracts with incumbent suppliers. Tender processes encourage innovation, competition and market entry, which would minimise contract costs over time.

1.3 Findings and recommendations

Our findings and recommendations, and the pages on which they appear, are listed below.

Findings

Recommendations

1.4 Structure of this report

The following chapters contain our analysis of operational and regulatory changes during the review period, our review of Forestry Corporation's benchmarking report and our findings and recommendations.

- Chapter 2 outlines our review scope and approach
- Chapter 3 details the operational changes within the review period which affected native timber harvesting and haulage costs
- Chapter 4 details the regulatory changes within the review period which affected native timber harvesting and haulage costs
- Chapter 5 presents our review of Forestry Corporation's benchmarking report
- Chapter 6 presents future opportunities to improve the efficiency of native timber harvesting and haulage.

Background information on the native forestry industry in NSW, and further context for this review, is at Appendix B.

2 Scope and approach to this review

The purpose of this review is to identify improvements that Forestry Corporation could make to its management of native timber harvesting and haulage costs to reduce these costs.

We considered Forestry Corporation's benchmarking report and a range of other relevant information in making our recommendations, including:

- information from Forestry Corporation, industry and government stakeholders provided through consultations
- the operating environment for native timber harvesting and haulage during and since the review period
- the challenges faced by the industry as a result of the 2019-20 bushfires.

This information suggests that Forestry Corporation's native timber harvesting and haulage costs are likely to increase in the next review period and beyond, regardless of any improvements that could be made to the management of these costs. We also consider there are limited opportunities to increase the efficiency of existing operations. We have therefore focused our recommendations on improvements in the efficiency of the harvesting and haulage markets that will help to mitigate future cost pressures.

The sections below provide an overview of the scope of our review and our approach to it.

2.1 Review scope

The Forestry Act requires IPART to review Forestry Corporation's benchmarking report and make recommendations about improvements that Forestry Corporation might make to its management of native timber harvesting and haulage costs to reduce these costs. Native timber harvesting and haulage does not include timber harvesting and haulage from plantations.

Although our findings relate to the review period, our recommendations, by nature, are forward-looking. It is important that these recommendations are timely and relevant to the current and future context of the forestry industry in NSW.

Native timber harvesting and haulage operations are influenced by the contractual arrangements and conditions in the broader forestry industry, including WSAs between Forestry Corporation and sawmills. Our recommendations recognise this operational context.

In the next 5-10 years, we expect the forestry industry in NSW will undergo significant change, both as a result of the 2019-20 bushfires, which affected 634,000 hectares of State forest available for timber production, and as long-held North Coast WSAs expire. Our recommendations address impediments to the efficient operation of harvesting and haulage markets by improving the transparency of costs and contract competitiveness.

While harvesting and haulage costs may increase in the future because of the impact of the 2019–20 bushfires and regulatory change, our recommendations aim to improve the functioning of harvesting and haulage markets, which would reduce costs to the minimum possible cost, given other influences.

2.2 Our approach

The Forestry Act provides that, in making its recommendations, IPART is not limited to matters included in Forestry Corporation's benchmarking report and may take into consideration any information IPART considers relevant.

As such, our recommendations arise from our review of Forestry Corporation's benchmarking report as well as our broader research. In addition to reviewing Forestry Corporation's benchmarking report, we:

- obtained background information from Forestry Corporation to assist in our understanding of industry context
- conducted desktop research and analysed sales and cost data from Forestry Corporation to independently verify the findings of Forestry Corporation's benchmarking report
- consulted with government stakeholders, harvesting and haulage contractors, and sawmills, to gather information on costs and issues within and since the review period.

Our findings, from these research and consultation processes, are presented throughout this review of Forestry Corporation's native timber harvesting and haulage costs. Other matters raised which did not directly affect harvesting and/or haulage costs within the review period, or which were not directly relevant to our review scope, are summarised at Appendix D.

3 Operational changes affecting harvesting and haulage costs

Changes to harvesting and haulage operations have cost implications for contractors, which can flow on to Forestry Corporation's costs for these services. This chapter explores 2 operational changes which arose during the review period:

- the change to the difficulty class matrix for measuring harvesting rates
- the introduction of the North Haul consortium and central dispatch facility.

Both of these changes put downward pressure on Forestry Corporation's native timber harvesting and haulage costs.

To ensure that harvesting and haulage contract rates are efficient, we recommend a competitive tender process for all expired harvesting and haulage contracts, rather than directly negotiated contract extensions with incumbent contractors.

Finding

1 Forestry Corporation's use of difficulty class matrix contracts put downward pressure on its harvesting costs during the review period.

Recommendation

1 Forestry Corporation conduct a competitive tender process for all expired harvesting and haulage contracts, rather than extend contracts with existing suppliers.

3.1 Change to the difficulty class matrix for measuring harvesting contract rates

During the review period, Forestry Corporation changed its approach to measuring harvesting contract rates, from a 'crew day rate' contract to a 'difficulty class matrix' (DC matrix) contract. This move reversed a change to crew day rate contracts in 2012.[ii]

A crew day rate contract covers the costs of operating a harvesting crew, including costs of running harvesting machines, diesel, wages and overheads, with a formula applied to determine the value of harvested products.

In contrast, a DC matrix contract is based on Forestry Corporation's estimates of the species mix and harvestable quantity in a given forest coupe. Harvesting in higher-productivity forest coupes is easier, so Forestry Corporation pays a lower rate for harvesting in these areas, and vice versa for harvesting in lower-productivity coupes.

Forestry Corporation moved towards directly negotiating DC matrix contracts during this review period because crew day rate contracts had increased harvesting contract rates since 2012. Forestry Corporation's harvesting managers found that DC matrix contracts were 'significantly easier to manage' and that there is evidence that these contracts 'offer a cheaper alternative to crew day rate contracts'.[iii]

3.1.1 Harvesting contractors reported difficulty in covering costs under DC matrix rates

Forestry Corporation produces 12-month harvesting plans, for which harvesting contractors submit tenders to complete the work. Contractors noted that they price their tenders based on the estimated proportions of wood that are relatively easy and hard to harvest.

Contractors identified issues where actual harvesting patterns and volumes differed from Forestry Corporation's plans. Where discrepancies occurred, contractors identified instances where DC matrix rates did not cover their harvesting costs, resulting in lower rates and/or losses for harvesting contractors. Further, contractors raised issues with volume limits and considered that rates for lower productivity areas were insufficient to incentivise harvesting relative to higher productivity areas.

However, contractors also recognised that crew day rate contracts may have imposed higher contract management costs on Forestry Corporation, alongside increasing harvesting costs over time. They acknowledged that Forestry Corporation has to balance the interests of harvesting contractors (to recover costs) and sawmills (who face the higher harvesting rates through delivery charges).

While Forestry Corporation conducts a quarterly review of DC matrix rates, its adjustments generally reflect input cost changes (e.g. changes in the consumer price index or diesel fuel index). Harvesting contractors noted that Forestry Corporation made some adjustments to rates under DC matrix contracts to help contractors recover increased costs, but that contractors continue to face challenges in recovering harvesting costs where actual harvesting patterns or volumes differ from plans.

We consider it is likely that some of the issues faced by contractors in tendering under DC matrix contracts relate to their recent introduction. When contractors next submit tenders, greater experience will help them to price tenders accordingly. We do not consider that the change to the DC matrix has introduced an impediment to the efficient functioning of the harvesting market, or introduced a barrier to entry.

3.2 Centralised haulage operations on the North Coast

In the previous review period (1 July 2013 to 30 June 2016) the haulage market was characterised by a large number of competitive, small-scale firms. Fifteen firms competed for contracts during the previous review period, with about half of these operating on the North Coast and the other half on the South Coast.[iv]

Forestry Corporation found that this market-based approach did not provide it with sufficient visibility over haulage operations and costs, resulting in sub-optimal efficiencies and dissatisfaction from its sawmill customers. To improve operational efficiencies on the North Coast, Forestry Corporation rejected its North Coast haulage tenders in 2014 and gave contractors a 12-month contract extension. It advised contractors that it was seeking proposals to improve innovation and efficiency in the North Coast hardwood supply chain.[v]

In 2016, Forestry Corporation awarded all hardwood haulage operations on the North Coast to a new haulage consortium (North Haul).[1] North Haul subcontracted Trimble to manage a central dispatch facility via its WSX digital system. The centralised dispatch facility increased truck utilisation, which reduced haulage costs, and improved market opportunities and service levels for Forestry Corporation's customers.[vi]

In 2018, Forestry Corporation conducted a review of the central dispatch operations. The review found that the benefits of centralised dispatch for Forestry Corporation were economic, safety, operational and contractual, with benefits achieved through greater haulage efficiencies (measured through truck utilisation and loaded haulage kilometres). Forestry Corporation passed on some of the financial benefits to its high quality sawlog customers.[vii]

Industry stakeholders consider that the benefits of central dispatch were uneven. Some stakeholders noted that Boral (the major market player on the North Coast) benefited the most, with improved service delivery achieved through regular scheduling of haulage loads arriving at its sawmills. Other sawmills benefited from greater transparency around when loads will arrive, but have experienced variability in delivery times and volumes, which hinders their operating efficiency.

Industry stakeholders also considered that the financial savings achieved through central dispatch were not sustained. However, Forestry Corporation reported that the cost savings were sustained throughout the review period, and that its customers benefited from financial savings, as well as 'a more reliable and transparent delivery system'.[viii]

Forestry Corporation's benchmarking report shows a fall in unit haulage costs in 2016−17 (see Table 3.1). Indufor notes that this reflects the introduction of the North Haul consortium, but also carries on a trend of falling haulage rates in the preceding years.[ix]

Table 3.1 shows that haulage rates increased in the next 2 years, resulting in an overall increase of 7.7% over the review period. Indufor suggests that these haulage cost increases reflect increases in the cost of fuel. Despite these fuel cost increases, Indufor indicates that data on payloads, truck utilisation and loaded kilometres are evidence that North Haul efficiencies were maintained,[x] and hence that the central dispatch facility played a role in preventing further haulage rate increases during the review period.

1 The consortium includes Hoffman's Haulage, Greensill Bros and Brian Smith Timber Transport. Boral (second largest native timber sawmiller) manages the North Haul consortium, using the Trimble Forestry central dispatch management service to schedule haulage loads. North Haul's contract is with Forestry Corporation, not Boral.

Table 3.1 Production North, rate of change – haulage unit costs ($ per tonne kilometre)

	2015−16	2016−17	2017−18	2018−19	Change 2016−19
Haulage unit costs	0.2006	0.1936	0.2032	0.2161	0.0155
Annual change		-3.5%	4.9%	6.4%	2.6%
Total change					7.7%

Source: Indufor, Native Forest Harvesting and Haulage Review and Benchmarking, Final Report (Table 3-6), based on FCNSW, ABS.

3.2.1 The North Haul consortium displaced other contractors, but a market based process for expired contracts will support market efficiency

As only 3 contractors are involved in the North Haul consortium, the other 5 North Coast haulage operators did not receive new contracts in 2016. These contractors had to alter their operations, for example, shifting to private native forestry, or maintaining idle capacity.

Our consultations with these haulage operators suggested that if the North Haul contract is renewed, this could result in them going out of business or no longer contracting with Forestry Corporation. To maximise industry efficiency, all operators should have an opportunity to tender for the contracts, with the most efficient option being successful. Industry restructure resulting from unsuccessful contractors exiting the market can be challenging in the short term, but the resulting improvement in efficiency will benefit individuals, businesses and regional economies in the longer term.

Contractors also noted that the business exits could reduce competitiveness in the market, and make it more likely that North Haul will retain its competitive advantage in future contracts. This could result in higher market concentration and, potentially, market power for the North Haul consortium. However, this should not negatively impact Forestry Corporation's haulage costs, provided the consortium operates efficiently. If the consortium uses market power to increase prices over time, we would expect to see new, more efficient, haulage businesses enter in an efficient market. This highlights that a functioning market is important to ensure Forestry Corporation's contract costs are efficient.

Further, the consortium (while made up of 3 contractors) is effectively operating as a monopoly on the North Coast. Forestry Corporation considers that the consortium has retained the independence of the individual firms and that there is the potential for these firms to recreate market tension if they choose to do so. However, as there is no indication that the consortium intends to separate, Forestry Corporation will need to use its countervailing market power as the major customer of haulage services to ensure that the consortium does not take advantage of its market position.

3.2.2 A market based process for expired contracts will support market efficiency

Over the last decade, Forestry Corporation has periodically conducted competitive tenders for harvesting and haulage contracts on the North Coast and South Coast. However, during the review period, Forestry Corporation directly renegotiated its expired harvesting and haulage contracts with existing contract holders. Forestry Corporation favoured direct negotiation because of a lack of new entrants and limited market forces. This is consistent with its procurement policy, which permits direct negotiation when rates are competitive and not influenced by market forces, existing providers are performing, and there are no changes to contractors and supply.

Forestry Corporation considers that the renegotiated prices were competitive as the contracts had previously been sourced from a competitive open market process, and contractors were not seeking rate increases. Forestry Corporation's understanding of the market, the contracted harvesting and haulage operations, and the businesses they engage with, gave it confidence that direct negotiation would result in competitive rates in its contracts.

While Forestry Corporation successfully used direct negotiation in the review period to maintain harvesting and haulage costs at reasonable levels, we note that this may not always be the case. To ensure the market functions efficiently, we recommend that Forestry Corporation go to market for all expired haulage contracts, rather than continually extending contracts with incumbent suppliers.

We consider this practice should be generalised to all harvesting and haulage contracts to elicit efficient contract tender rates from the market. We acknowledge that this process has a greater administrative cost than extending existing contracts. This administrative cost may be proportionally more significant for shorter-term contracts (e.g. 12-month contracts relative to 5-year contracts), and we recognise that shorter-term contracts may be more prevalent during industry recovery from the 2019–20 bushfires.

However, the practice of continually extending contracts can create a barrier to entry, favouring incumbents. This can impede efficient market operations and potentially result in significant long term costs to the industry.

4 Regulatory changes affecting harvesting and haulage costs

During the review period, the introduction of the Coastal Integrated Forestry Operations Approval (IFOA) under transitional arrangements anecdotally increased costs and complexity for native timber harvesting operations.

We expect that the full introduction of the Coastal IFOA and regulatory changes resulting from the 2019–20 bushfires will create challenges for harvesting and haulage operations, potentially resulting in upward pressure on costs in the next review period.

Findings

2 The Coastal Integrated Forestry Operations Approval (IFOA) has changed harvesting conditions, which could increase harvesting costs in the next review period.

3 Regulatory changes arising from the 2019–20 bushfires could increase harvesting costs in the next review period.

4.1 Introduction of the Coastal IFOA under transitional arrangements

Integrated forestry operations approvals (IFOAs) outline the rules and requirements for forestry operations in NSW, including rules for environmental protection and sustainable forest management. All forestry regions in NSW are covered by an IFOA.

On 16 November 2018, the NSW Government 'remade' the IFOAs for the Upper North East, Lower North East, Southern and Eden regions into one Coastal IFOA. This brought the total number of IFOAs in NSW to 4 (down from 7).[2]

The Coastal IFOA was introduced under a transitional arrangement, permitting operations to continue under the previous IFOAs for 2 years. This means that the impacts of the Coastal IFOA in the review period were limited, and likely less than its full implications. Forestry Corporation advises that the transition to the Coastal IFOA is now complete.

The Coastal IFOA provides new rules on forest protection, including minimum standards to preserve habitat areas. It is intended to reduce the costs of implementation and compliance and provide more flexibility in harvesting practices while complying with environmental regulations, without reducing wood supply.[xi]

2 The other 3 IFOAs are the Brigalow Nandewar, South-Western Cypress and Riverina Red Gum IFOAs. Forestry Corporation identifies these areas as their 'western region' of operations. These areas and their operations are outside the scope of our review as forestry operations are mostly conducted on a stumpage arrangement, i.e. sawmills pay a stumpage royalty for trees and arrange for their own harvesting and haulage. Forestry Corporation does not have any oversight of these harvesting and haulage operations.

4.1.1 The Coastal IFOA increased costs and compliance for contractors

Through our consultations, harvesting contractors advised that the Coastal IFOA increased their level of responsibility and risk of fines for breaching IFOA conditions. For example, contractors reported that they became responsible for identifying trees suitable for harvesting, as well as for marking harvesting distances from streams as a result of the Coastal IFOA. If, for example, contractors harvested timber closer to streams than permitted under the Coastal IFOA, they could face penalties. These penalties include fines that range from $7,500 for individuals, to $15,000 for businesses, up to a maximum of $5 million for wilful breaches. As many harvesting contractors are small businesses, fines of these magnitudes could put them out of business.

We note that contractors have always been ultimately liable for breaches of IFOA conditions and that Forestry Corporation has endeavoured to ensure its contractors meet regulations.[3] However, the visibility of penalties for contractors may have increased since the transition to the Coastal IFOA.

Contractors also identified the challenges they faced in recovering their cost increases resulting from the Coastal IFOA and other regulatory changes (e.g. increased work health and safety (WHS) compliance requirements).

Several current harvesting contracts were negotiated prior to the introduction of the Coastal IFOA. As such, harvesting contractors tendered rates based on harvesting conditions that have since changed. Contract terms allow for the review of costs in this instance, but contractors reported that they did not receive rate increases in the review period to cover the longer harvesting times required under the new conditions.

Contractors suggested that contract tender rates are likely to be higher in the next contract cycle to account for the impacts of the Coastal IFOA and other regulatory change (e.g. increasing WHS compliance costs).

In the case of higher costs, and hence rates, for contractors resulting from the Coastal IFOA, Forestry Corporation's direct operational costs in future review periods are likely to increase.[4] Forestry Corporation also notes that the Coastal IFOA has increased its 'planning or management costs', which include:

- higher staff costs associated with identifying retention areas
- reducing the net harvest area
- additional requirements for monitoring, reporting and compliance.

While harvesting costs are expected to increase under the Coastal IFOA, we do not consider that this represents an impediment to the efficient functioning of the harvesting market.

3 Forestry Corporation considers that contractor responsibility for identifying trees available for harvesting was introduced prior to, and separately from, the introduction of the Coastal IFOA.

4 Forestry Corporation intends to further investigate the productivity and cost impacts of the Coastal IFOA on contractors in 2021.

4.2 Site-specific operating conditions were introduced after the 2019−20 bushfires

The 2019–20 bushfires occurred outside this review period, but its impacts and the government's regulatory response are relevant to the broader review context.

The bushfires damaged 634,000 hectares, or 64%, of State forest area available for timber production. Damage in the South Coast region was particularly severe, with Forestry Corporation estimating that 81% of harvestable native hardwood forests in this region was burnt in the fires.[xii] Across the state, a large number of native forests have been closed until further notice due to the impact of the bushfires.

Following the bushfires, the NSW Environment Protection Authority (EPA) developed site-specific operating conditions (SSOCs) for harvesting in fire-affected native forests, where the environmental risk of harvesting can be reasonably mitigated. As the Coastal IFOA was not designed to moderate environmental risks associated with severe bushfires, these supplementary conditions are additional to the Coastal IFOA prescriptions. In September 2020, the EPA determined that a return to operations under the Coastal IFOA alone was not tenable at the time.[xiii]

4.2.1 SSOCs have increased administrative requirements

The impacts of the 2019-20 bushfires on harvesting costs are relevant considerations in this review because:

- the bushfires have impacted resource availability and the native timber harvesting operating environment[5]
- our recommendations are forward-looking, and if implemented, may affect Forestry Corporation's operations and costs in the next review period.

Therefore, while the bushfires occurred outside the review period, our recommendations must have regard to the bushfire-impacted environment in which Forestry Corporation is currently operating.

The introduction of SSOCs has reportedly increased costs for Forestry Corporation. Specifically, Indufor notes that implementing SSOCs has:

> …triggered a significant increase in planning, monitoring and reporting requirements. Operational implications include a greater level of tree retention, a reduced harvestable area due to increased buffers and slope restrictions, and an increased level of road drainage works and debris management.[xiv]

These conditions also affect the work of harvesting contractors. While harvesting cost increases from the introduction of SSOCs are expected in the next review period, these increases are not impediments to the efficient functioning of harvesting and haulage markets. Providing as much clarity as possible, as early as possible, will help to minimise the impacts and cost increases arising from regulatory change.

5 Forestry Corporation estimates a 4% reduction in long-term timber supply in its North Coast production region, and a 30% reduction in the South Coast region.

5 Review of native timber harvesting and haulage costs

Forestry Corporation engaged Indufor to review and prepare a benchmarking report on its native timber harvesting and haulage costs during the review period. Overall, Indufor found that:

- Forestry Corporation's costs were reasonable relative to other jurisdictions and indexation benchmarks
- the harvesting and haulage markets were contestable and not exhibiting signs of market power in local or regional markets
- Forestry Corporation did not appear to fully recover its contract and administration costs during the review period.

Indufor's findings are similar to the findings in its previous (2017) benchmarking report.

We have reviewed the benchmarking report and compared Indufor's findings with our understanding of costs in the review period. In general, Indufor's findings are consistent with our own.

We recognise the challenges facing the forestry industry and agree with Indufor's assessment that Forestry Corporation's management of native timber harvesting and haulage costs has kept rates comparable to indexation increases. We have made a recommendation to improve efficiency, specifically to improve cost transparency and recovery.

Findings

4 Harvesting costs increased during the review period, and were higher than in other jurisdictions, however, they were reasonable given different commercial, regulatory and operating environments.

5 Haulage costs increased during the review period, but were reasonable when compared with other jurisdictions.

6 Forestry Corporation's delivery charges (the amounts received by Forestry Corporation from its customers) fell during the review period. The delivery charges were reasonable compared with the previous review period.

7 There is evidence of market concentration, particularly in the Upper North and Lower/North Central markets. In the review period, Forestry Corporation's countervailing market power helped to keep harvesting and haulage costs reasonable.

8 The number of active harvesting contractors has increased, and number of haulage contractors has decreased, relative to the previous review period.

9 Forestry Corporation's administration charges were reasonable in the review period.

10 Forestry Corporation's delivery charges did not fully recover its costs during the review period, but Forestry Corporation expects to rectify this in the next review period.

Recommendation

2 To improve transparency and assist in cost recovery, Forestry Corporation provide data on the agreed components of its delivery charge (harvesting, haulage, stumpage and administration costs) to wood supply agreement holders each year, as well as data on its actual incurred costs.

5.1 Benchmarking analysis

Indufor undertook benchmarking of Forestry Corporation's harvesting and haulage costs and found that:

- There are significant differences in commercial, regulatory and operating environments between NSW and other native forest jurisdictions. Quantification of the impact of these factors is complex and there is insufficient data to model impacts effectively.
- Harvesting costs in NSW were higher than costs in other jurisdictions, reflecting jurisdictional differences. Harvesting costs rose at a rate commensurate with the weighted average increase in CPI and fuel indices.
- Haulage costs were within the ranges observed across comparable operations.

Indufor's findings are consistent with our understanding of the industry, as discussed in the following sections.

5.1.1 Harvesting unit costs are higher in NSW than other jurisdictions, and ongoing monitoring will ensure these costs remain reasonable

We consider that Indufor's approach to analysing harvesting unit cost increases over the review period is reasonable. It compared the growth in Forestry Corporation's unit harvesting costs during the review period with average growth in indexation of key cost drivers for harvesting (labour and fuel)[6] and benchmarked these costs against those in other jurisdictions.[7]

6 Indufor estimated growth in 'average indexation' based on a weighted average change in the consumer price index (CPI) and fuel costs (as measured by the average terminal gate price for diesel in Sydney). The weightings were estimated in the proportions stated in the review provisions of harvesting contracts.

7 Indufor has measured a full 3-year period in its analysis by including 2015-16 data to enable measurement of the growth during 2016-17. This is a change relative to its approach in the previous review, which measured costs over a 2-year period. The new approach is a more accurate measure of change during the review period. However, we note that it has implications for comparability of data and analysis between the two reviews.

Input cost comparisons

Indufor compared the average annual increase in unit harvesting costs over the review period (4.2%) with:

- growth in CPI (2.0%)
- growth in a fuel cost index (9.0%)[8]
- a 'weighted average indexation' measure, which is the index change in CPI and fuel prices, weighted for the respective contribution of labour and fuel costs to harvesting costs (3.0%).[9]

Over the review period, harvesting costs grew at a similar rate in the North Coast and South Coast (excluding Eden) regions, but average costs were higher in the North Coast, reflecting the higher-value product mix and localised harvesting conditions.

Indufor noted that the increase in Forestry Corporation's costs included the impact of a 27% increase in the fuel benchmark cost. We do not consider this is a meaningful comparison, as this value reflects the *total* fuel cost increase over the review period, not the average *annual* increase (9.0%). Further, fuel reflects a relatively small share of the weighted average indexation for harvesting, relative to labour costs.

While results in consecutive review periods are not directly comparable, we note that the difference in Forestry Corporation's unit costs in this review period relative to other jurisdictions is similar to the difference estimated in the 2017 benchmarking report. However, in the previous review period, average unit costs rose by less than CPI.[xv]

Jurisdictional comparisons

Our consultations and analysis indicate that operational and regulatory changes influenced harvesting costs in the review period. Specifically, the change to the difficulty class (DC) matrix to measure harvesting costs during the review period may have placed downward pressure on harvesting costs (see section 3.1). On the other hand, the introduction of the Coastal IFOA may have contributed to increases in Forestry Corporation's harvesting costs relative to other jurisdictions (see section 4.1).

Overall, we consider that harvesting costs in the review period were affected by factors specific to the NSW harvesting environment, and while costs were higher than in other jurisdictions, these costs were reasonable.

However, there is a need for ongoing monitoring and benchmarking of cost increases. This would help to identify if future differences between Forestry Corporation's costs and benchmarked costs remain reasonable, after accounting for market-specific factors.

8 Indufor uses the average terminal gate price for diesel in Sydney for this measure.

9 The relevant CPI and fuel proportions are reflected in the review provisions of harvesting contracts. Fuel costs make up a greater share of haulage costs, relative to harvesting costs.

Our findings are consistent with Indufor's benchmarking analysis, which compared Forestry Corporation's average unit costs against costs in other jurisdictions. This showed that Forestry Corporation's average unit costs were higher than in Victoria, Tasmania and Western Australia. Indufor's analysis showed that cost differences relative to other jurisdictions were partially explained by market specific factors affecting operating costs. These included differences in harvesting productivity, yield and terrain.

For example, native timber harvesting processes in NSW include a single tree selection (STS) process, which determines which trees may be harvested, based on the quality of surrounding trees retained. Other states favour clearfelling operations, which involve removing all trees from a given area, and which average a higher yield and lower cost than STS operations. Indufor's findings are similar to those in its 2017 benchmarking report.

Given the challenges of inter-jurisdictional comparisons, Indufor recommended that Forestry Corporation consider regular independent assessments of harvesting contractor productivity levels as a guide to harvesting cost. If actioned by Forestry Corporation, we consider that this data could be valuable as an additional benchmarking metric.

5.1.2 Haulage unit costs are comparable to jurisdictional and indexation benchmarks

Indufor's approach to analysing haulage unit cost increases over the review period is consistent with its approach for harvesting unit cost increases, which we consider reasonable. Indufor's haulage analysis includes costs per green metric tonne and costs per tonne kilometre. We consider costs per tonne kilometre is a better indicator of haulage costs, as it properly reflects the impact of distance as a variable between jurisdictions.

We find that Indufor's haulage unit cost analysis is reasonable, and that Forestry Corporation's haulage costs in the review period are reasonable when benchmarked against costs in other jurisdictions.

Input cost comparisons

Over the review period, haulage unit costs per tonne kilometre increased at an average growth rate of 4.3%. This increase is similar in magnitude to the 4.1% growth in weighted average indexation.[10]

During the review period, haulage costs increased in both the northern and southern production regions. However, we note that the increase in haulage costs would have been higher in the absence of the introduction of the North Haul consortium on the North Coast, which contributed to a 3.5% fall in haulage costs in the Northern region in 2016-17, (see section 5.2).

10 The 'weighted average indexation' measure for haulage is the index change in CPI and fuel prices, weighted for the respective contribution of labour and fuel costs to haulage costs (4.1%). This value is higher than the weighted average indexation for harvesting (3.0%) because fuel is a greater contributor to haulage costs, and fuel costs increased faster than CPI over the review period.

Jurisdictional comparisons

Forestry Corporation's haulage unit costs per tonne kilometre were slightly higher than, but comparable to, cost benchmarks in Victoria and Western Australia, and higher than costs in Tasmania. Indufor attributed differences in costs to transport distances, haulage efficiencies (e.g. vehicle types, loaded kilometres and truck utilisation), terrain and travel speeds.

These differences would have contributed to higher haulage costs in NSW relative to other states. However, in the review period, the haulage market on the North Coast benefited from efficiency savings from the centralised dispatch facility. In the absence of the central dispatch facility, cost differences between jurisdictions would have been higher.

5.1.3 Delivery charges in the review period were reasonable

The 'delivery charge' is the amount received by Forestry Corporation from its customers. It comprises the estimated contracted harvesting and haulage costs, a stumpage charge, and may also include an administration charge[11] incurred by Forestry Corporation in meeting its WSA obligations.[12]

During the review period the delivery charge ranged between $62.84 and $68.30 per green metric tonne. Delivery charges were slightly higher in Forestry Corporation's northern production region. It is likely this reflects higher harvesting costs for higher value wood in these regions.

Indufor found that the delivery charge decreased by an average of 1.9% per year during the review period. This reflected a sharp fall in the delivery charge of 14.1% in 2016−17 and growth in the charge in subsequent years. Yearly changes in the delivery charge can result from changes between planned and actual harvesting, due to factors such as different contractors, wet weather, regulatory change and public activism (protests).

As different jurisdictions apply different pricing approaches for wood supply, Indufor noted that data was not available to benchmark the delivery charge. However, while review periods are not directly comparable, we note that the fall in the delivery charge in the current review period contrasts with an annual increase in the delivery charge of 2.3% over the previous review period. Based on this high-level analysis, the delivery charge in the current review period appears reasonable.

The efficiency of Forestry Corporation's delivery charges is discussed in section 5.3.2.

11 Note that the 'administration charge' refers to the amount Forestry Corporation charges its customers. This is distinct from its 'administration cost', which is its estimated cost of managing and administering harvesting and haulage services.

12 Most of the timber supplied by Forestry Corporation is sold on a 'mill door' basis. This timber is subject to a 'delivery charge', which may include an administration charge. Forestry Corporation also supplies timber under stumpage arrangements where customers arrange for their own harvesting and haulage costs. Stumpage arrangements are out of scope for our review. Further detail on these price arrangements is at section B.3.1 in Appendix B.

5.2 Market analysis

Market entries and exits, market concentration and market power can all influence harvesting and haulage costs. However, as we found that harvesting and haulage costs were reasonable (see sections 5.1.1 and 5.1.2), we consider that these factors did not place excessive upward pressure on costs during the review period. Instead, other industry factors, including but not limited to Forestry Corporation's countervailing market power, likely worked to keep costs at reasonable levels.

5.2.1 Market entries and exits

During the review period, there appeared to be a reasonable level of entry and exit in the harvesting and haulage markets despite stakeholders describing barriers to entry for contractors.

These barriers to entry for contractors included:

- high insurance costs – which make it more difficult for operations to remain viable
- financing of equipment – longer contract terms can support contractor's investment in capital, with some stakeholders indicating that 8 to 9-year contracts are more suitable than the current 5-year contracts
- attracting and retaining young workers – the native timber industry has historically found it difficult to attract new staff due to the work being difficult and specialised, and the lack of job security related to industry viability.

These are consistent with the barriers to entry identified by Indufor (equipment, labour, expertise and location).

Overall, we consider that the barriers to entry in the harvesting and haulage markets are relatively low, and do not appear to have hindered market entry and exit during the review period.

5.2.2 Market concentration

We analysed market concentration, by revenue,[13] across 4 geographic markets (Upper North, Lower North/Central, South and South West) using the Herfindahl- Hirschman Index (HHI) of market concentration.[14] Our analysis found evidence of market concentration in most harvesting and haulage markets. In particular, harvesting in the South West region, and haulage in all markets except the South, were operating as virtual monopolies during the review period.

13 Market concentration by revenue is the distribution of revenue in a market between market participants. High market concentration occurs when a few participants receive a large proportion of the total market revenue, and low market concentration is when revenue is more widely distributed (which can occur where there are a larger number of market participants). Market concentration can be estimated through other measures, for example, by volume, however, we did not have the data for this analysis.

14 HHI is a commonly accepted measure of market concentration, which considers the number of participants in a market and their respective market shares. High market concentration can impact market power, and can contribute to upward pressure on prices.

We therefore disagree with Indufor's finding that changes in contractor market shares over time indicated a degree of competition across all markets. However, there was no evidence that this market concentration resulted in higher costs during the review period.

Further information on the HHI and our analysis of market concentration is at Appendix C.

5.2.3 Market power

We consider that the North Haul consortium and monopolies in other markets held market power during the review period. This is in contrast to Indufor's finding that the markets for harvesting and haulage services appear to result from contestable processes, and that the market concentration and pricing outcomes do not appear to highlight potential market power in local or regional markets.

However, there was no evidence of contractors using this market power to place upward pressure on harvesting and/or haulage contract rates in the review period. It is likely that Forestry Corporation's countervailing market power worked to keep costs at reasonable levels.

It is important for Forestry Corporation to continue to manage the risks posed by market concentration and market power. As the major purchaser of these services, it can ensure value for money and cost efficiency in the harvesting and haulage markets. In the next review period, we will consider how Forestry Corporation is managing these risks and potential cost increases.

5.3 Efficiency analysis

There are a number of challenges facing the forestry industry. In the review period, we consider that Forestry Corporation's management of native timber harvesting and haulage costs has kept rates comparable to indexation increases.

Indufor's efficiency analysis considered Forestry Corporation's administration costs, and its ability to recover its costs during the review period. It also considered opportunities for Forestry Corporation to make efficiency improvements.

5.3.1 Forestry Corporation's administration charges are reasonable based on an estimate of its administration costs

Forestry Corporation's harvesting and haulage costs include the costs of administering harvesting and haulage contracts. These costs may be reflected in an 'administration charge' in its WSAs, however, not all WSAs in the review period had a provision for this charge.[15] Forestry Corporation reported an administration charge of $3.82 per green metric tonne, a value which is indexed annually.

15 WSAs for high quality sawlogs on the North coast, and most grades on the South Coast, allowed for an administration charge. Forestry Corporation has advised that, resulting from our recommendation in our 2017 review, they made changes to their delivery charge to fully recover contract administration costs from July 2019 onwards.

Indufor estimated Forestry Corporation's administration cost based on staff costs associated with managing harvesting and haulage operations. This includes 14 full time equivalent (FTE) staff dedicated to management, supervision and coordination of contractors and an additional 19 positions, whose roles are 50% attributed to managing harvesting and haulage operations.

This resulted in an estimated administration cost of $3.73 per green metric tonne.[16] It represents a slight increase from $3.60 per green metric tonne, estimated in the previous review period. Indufor considers the administration cost is commensurate with comparable native forest operations, on a unit cost and volume per FTE basis.

Indufor's approach to estimating administration costs is reasonable, but heavily dependent on its assumptions. While personnel cost data was not available for us to conduct sensitivity analysis, we note that changes to the assumptions, on staff time attributable to managing harvesting and haulage operations, or on wage indexation, would have a direct impact on the estimated administration cost.

We consider that Forestry Corporation's administration charge is reasonable as it is comparable to its estimated administration costs.

5.3.2 Forestry Corporation's delivery charges did not fully recover its harvesting and haulage costs in the review period

Cost recovery refers to Forestry Corporation's ability to recover its harvesting and haulage costs through revenue for its activities. In addition to its delivery charges, Forestry Corporation received industry adjustment grants from the NSW Government, which related to forestry policy changes on the South Coast.[xvi] However, during the review period, Forestry Corporation's costs exceeded its revenue from these 2 sources, with an average shortfall of $3.96 per green metric tonne.

Indufor notes that Forestry Corporation's actual operating costs were higher than anticipated during the review period, which contributed to the estimated shortfall. Forestry Corporation reviewed its delivery charges in 2017 and made changes to operating plans and delivery costs. The new delivery costs were higher than predicted delivery costs at the time of negotiating delivery charges with customers, resulting in a shortfall. Indufor found a marginal improvement in Forestry Corporation's cost recovery in the last year of the review period.

We note that the negative operating margin is an issue that has carried over from the previous review period, when a shortfall of similar magnitude was reported.[17] However, Forestry Corporation has reportedly made changes to its delivery charges to achieve cost recovery in the future. Indufor's findings are consistent with our understanding of the issue.

16 Indufor presented Forestry Corporation's administration cost 'per cubic metre', and Forestry Corporation's administration charge 'per green metric tonne'. Indufor has confirmed that all analysis was conducted on a 'per green metric tonne' basis and should be presented accordingly.

17 Indufor's 2017 benchmarking report identified an average operating margin of $0.05 per cubic metre when comparing revenue with contract costs only. Based on estimated administration costs of $3.60 per cubic metre in the review period, the estimated shortfall would have been approximately $3.55 per cubic metre.

5.3.3 There are limited opportunities for efficiency improvements

As discussed in Chapter 4, there are a number of future challenges facing the forestry industry, including:

- regulatory changes affecting harvesting processes
- supply impacts from the 2019–20 bushfires, particularly on the South Coast
- uncertainty as the industry recovers from the bushfires.

These factors may result in future cost pressures in harvesting and haulage.

We consider that Forestry Corporation's management of the harvesting and haulage market helped to contain cost increases during the review period, and consider there are limited opportunities to improve the efficiency of existing operations. This is consistent with Indufor's suggestion that strategies are required to mitigate the impact of future cost pressures.

Indufor proposes that Forestry Corporation monitor changes in the operating environment to help develop strategic options to mitigate these future cost pressures.

Improving cost transparency

One way for Forestry Corporation to clearly quantify changes to costs and revenues is by providing wood supply agreement holders with data on its delivery charge cost components (i.e. stumpage charge, harvesting and haulage contract charge, and administration charge).

In response to a recommendation in IPART's 2017 report, Forestry Corporation implemented changes to better recover its administration costs.[18] It also advised that the components of the delivery charge are visible to customers in the review process within WSAs. Through this process, customers have the opportunity to review, comment and discuss the year-on-year changes and movements in the underlying variables.

Commercial sensitivities currently prevent Forestry Corporation from publishing contract-specific data. However, as a first step, we consider that Forestry Corporation should provide a customer-specific data breakdown to each customer annually, regardless of whether they request it. While larger, or more sophisticated, businesses may be better placed to use this information, it should be provided to all customers to support transparency. This may also contribute to a better customer understanding of costs, and could assist with cost recovery.

18 Recommendation 5 in our 2017 review was: "[Forestry Corporation] unbundle the price for any native timber delivered to a sawmill, where FCNSW arranges the harvest and haulage, with the price disaggregated into: a stumpage royalty, a charge for harvesting costs, a charge for haulage costs, and a charge for the costs of administering harvesting and haulage services. The charges for harvesting, haulage and administration should recover the costs of these activities."

In addition to providing data on the components of the delivery charge, we recommend that Forestry Corporation provide its customers with information on how the delivery charge, as agreed in a given year, compared with its actual contract and administration costs in that year. Making this information available would address the information asymmetry between Forestry Corporation and its customers. In future, Forestry Corporation could also consider publishing this information on an industry-wide basis, after aggregating data to protect commercial sensitivities.

It is not clear which party should bear the risk associated with forecasting harvesting and haulage costs, particularly as these costs are affected by external regulatory factors. While a competitive market will not necessarily guarantee cost recovery, it will drive efficiency. In the long run, any 'unders and overs' should balance out.[19] Greater transparency around the alignment between agreed costs and actual costs could help to determine if this is occurring, or whether there is a case for intervention to manage variances between agreed and actual costs.

Indufor also recommended that Forestry Corporation could improve its records of contract negotiations by referencing outcomes to dated negotiations or approval processes. It suggested that this could help Forestry Corporation demonstrate its market-based contract prices. Indufor's recommendation is consistent with our recommendation to provide information to support cost recovery.

Improving cost recovery

While Forestry Corporation expects that changes to its delivery charges will enable it to fully recover its costs, this could be an ongoing challenge in a changing operating environment. Forestry Corporation will face challenges in cost recovery whenever actual costs differ from predicted costs.

Indufor recommended that Forestry Corporation explore mechanisms to reconfirm and reconcile delivery charge estimates on a quarterly or six-monthly basis. This approach could have advantages over the current annual review of delivery charges, which allows for future, but not retrospective, cost adjustments.

However, we note that such a system can introduce complexity, risk, and compliance and enforcement costs. Under business as usual conditions, Forestry Corporation's forecasts should account for the variability associated with weather, contractor availability and regulation. However, forecasting challenges have increased in a post-bushfire environment, as operational and regulatory changes have been required to amend operations in affected areas.

In general, it is reasonable for taxpayers to bear the cost of policy development, and for industry to pay for the costs of efficient regulation. However, it is less clear in this instance whether it is more appropriate for Forestry Corporation or its customers to bear the financial risk arising from the external factors driving uncertainty in Forestry Corporation's cost forecasts. We note that the post-bushfire operating environment is likely to be more costly because of supply-side impacts and increased environmental regulation.

19 Forestry Corporation currently has some WSAs with reconciliation terms.

6 Opportunities to improve industry efficiency

In the previous chapters, we explored the operational and regulatory changes which affected harvesting and haulage costs within the review period. We also considered the issues raised in consultations with harvesting and haulage contractors and government stakeholders.

The coming years will present opportunities and challenges for the industry, including with the expiry of North Coast WSAs in 2023 and 2028 and arising from the 2019-20 bushfires. Therefore, it is timely for government to consider issues affecting industry efficiency, which could help to ensure that harvesting and haulage costs are efficient in the future. Within the existing WSA system, this could include considering opportunities to incentivise efficient contract costs. More broadly, the government could consider a move to competitive allocation of native timber.

6.1 Incentivising efficient contract costs

Indufor found that Forestry Corporation's management of harvesting and haulage contracts for native timber operations has a range of benefits, including:

- better alignment of health and safety objectives
- greater control of environmental and silvicultural outcomes
- better control of value adding/recovery operations within the forest through more sophisticated log grading procedures, market segmentation and product allocation
- improved capacity to optimise the supply chain through making effective trade-off decisions in terms of forest infrastructure, recovered yield, harvesting costs and transport systems.[xvii]

Harvesting and haulage contract costs in this review period were reasonable, and Forestry Corporation's management of contracts may continue to result in reasonable costs over time. However, harvesting and haulage costs increased at a faster rate during this review period than in the previous review period. This trend could continue because of external influences on costs, such the 2019–20 bushfires and regulatory changes.

Introducing a 'check' into the system could incentivise efficient contract costs. This 'check' could involve restructuring future WSAs to allow customers to opt out of mill door arrangements during the contract, and procure their own harvesting and haulage services, if they can find a more efficient alternative. Customers who opt out of mill door arrangements would only pay Forestry Corporation a stumpage value for the wood under their WSAs. Given the structure and complexity of current WSAs, the introduction of such a system may not be straightforward, which could affect its net efficiency benefits.

6.2 Competitive allocation of native timber

Forestry Corporation's demand for harvesting and haulage services arises from its obligations under WSAs to supply specific volumes (and/or species) to its customers. The current North Coast WSAs were introduced almost 20 years ago, with relatively long contract terms designed to provide certainty for customers and to encourage investment.[xviii]

However, wood volumes committed under WSAs may not be economically sustainable. WSA obligations can necessitate harvesting and haulage operations that are not economically efficient – for example, harvesting in lower productivity areas, or hauling logs to customers further than the nearest sawmill, which may affect sawmill profitability.

The upcoming expiration of most North Coast WSAs in 2023, and all North Coast WSAs by 2028, provides the opportunity to reconsider wood supply and future allocations.[20] This includes consideration of whether WSAs are the most appropriate instrument to allocate wood supply. More efficient approaches to allocating wood supply will incentivise efficient harvesting and haulage costs, as these are the major costs faced by customers, and influence their willingness-to-pay for wood supply.

We consider that native timber should be allocated on a competitive basis, for example, through competitive tenders or auctions. All market players would have the opportunity to bid for supply at the same time, which would result in timber being allocated to customers who have the highest willingness-to-pay for the resource. This approach could improve economic efficiency compared with historical allocations.

Further, there should be no restrictions on the secondary trading of allocations. Trading allows allocation owners to maximise returns, and would ensure that timber is efficiently allocated to the highest value use at any given point in time.

It may also be appropriate to consider negotiating future supply agreements for shorter periods than the current 20 year WSAs, such as 5 to 10 years.[21] Given the resource reduction resulting from the 2019–20 bushfires (particularly on the South Coast), more regular adjustments to wood allocations may be required for economic or environmental reasons. This would reduce the risk that future changes in wood supply impose unforeseen costs on the industry and taxpayers.

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20 Note that South Coast contracts expired in December 2020, with renegotiations on hold while bushfire impacts are assessed.

21 A move towards shorter WSA terms is consistent with Forestry Corporation's recent negotiation of 10- to 15-year contracts in Eden (in 2018) and Tumbarumba (in 2019).

Appendices

A IPART's functions under the Forestry Act

Forestry Act 2012 No 96 [NSW]

91 Harvesting and haulage costs review

(1) As soon as practicable after the first 3 full financial years after the commencement of this section and every 3 financial years thereafter, the Corporation is to—

(a) review its native timber harvesting and haulage costs, and

(b) prepare a report on the results of the review that benchmarks those costs against the costs of similar organisations undertaking similar native timber harvesting and haulage operations.

(2) The Corporation may, subject to such requirements as may be prescribed by the regulations, engage an expert body or person for the purposes of the review and report.

(3) The Corporation is to provide its report to the Independent Pricing and Regulatory Tribunal.

(4) The Tribunal is to review the report of the Corporation and make any recommendations it thinks appropriate to the Corporation about improvements that the Corporation might make to its management of native timber harvesting and haulage to reduce its costs. In making any such recommendation, the Tribunal is not limited to matters included in the report and may take into consideration any information the Tribunal considers relevant.

(5) The reports and recommendations of the Corporation and the Tribunal are to be provided to the voting shareholders of the Corporation, who are required to make them publicly available.

(6) The Tribunal is (subject to the regulations) entitled to charge the Corporation for the costs reasonably incurred by the Tribunal in exercising its functions under this section.

(7) The regulations may make provision with respect to reviews and other matters under this section.

(8) Sections 24AB–24AD of the *Independent Pricing and Regulatory Tribunal Act 1992* apply to the function of the Tribunal under this section in the same way they apply to the function of the Tribunal under section 24AA of that Act.

(9) In this section—

financial year means a period of 12 months commencing on 1 July.

native timber harvesting and haulage does not include timber harvesting and haulage from plantations.

B Background on the native forestry industry in NSW

Forestry Corporation is a State Owned Corporation and is authorised to harvest timber from native forests and other Crown-timber lands. The area managed by Forestry Corporation is primarily native forests, with small areas of freehold and private land managed through joint investment partnerships. This land includes native forests and timber plantations, including both hardwood and softwood species. Forestry Corporation's costs for harvesting and haulage activities in native forests (native timber) are the focus of our review.

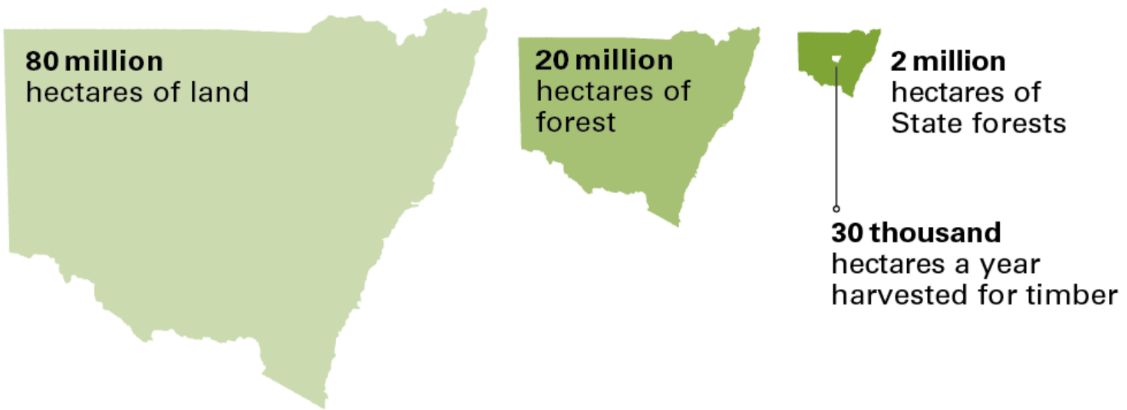
This appendix provides background on the native timber industry in NSW, including:

- Forestry Corporation's forest management and commercial operations
- a summary of current wood supply agreements (WSAs)
- how Forestry Corporation the organises harvesting and haulage of timber
- recent events in the forestry industry.

B.1 Native timber supply in NSW

There are around 20 million hectares of forest in NSW, which is roughly one quarter of the land area of the state. Around 10% of forests are managed by Forestry Corporation (2 million hectares), of which around 30,000 hectares (1.3%) is harvested each year (Figure B.1).[xix]

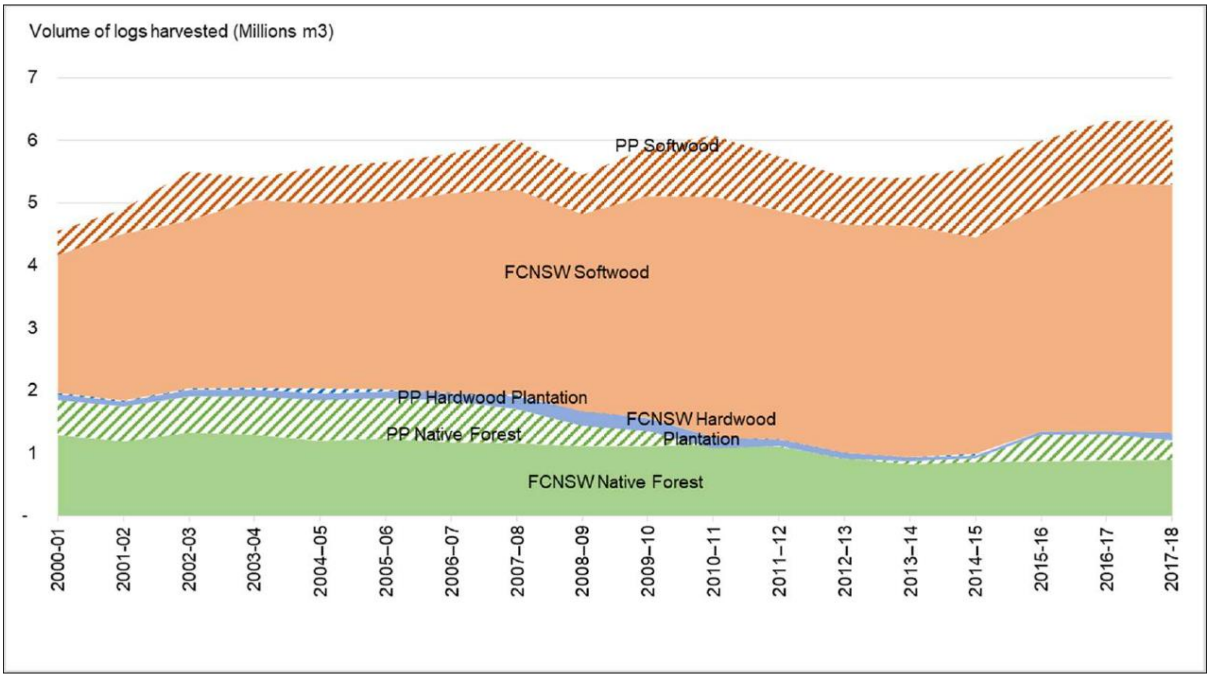
Figure B.1 Native forest in NSW



Source: Forestry Corporation.

Forestry Corporation is the largest manager of commercial native and plantation forests in NSW, and is the major supplier of harvested logs (see Figure B.2). Forestry Corporation produces around 14% of the timber produced in Australia annually, supplying customers with hardwood and softwood from its native forests and plantations.

Figure B.2 Total log harvest NSW 2000-01 to 2017-18



Note: PP refers to Private Property. FCNSW refers to Forestry Corporation of NSW.

Source: ABARES and Indufor, Native Forest Harvesting and Haulage Review and Benchmarking, Final Report, p 6.

Of the 6.2 million cubic metres of timber that was harvested in NSW in 2017-18, around 16% was from harvesting native forests. Over 90% of that native timber was harvested from forests managed by Forestry Corporation with the remainder from privately-owned native forests.

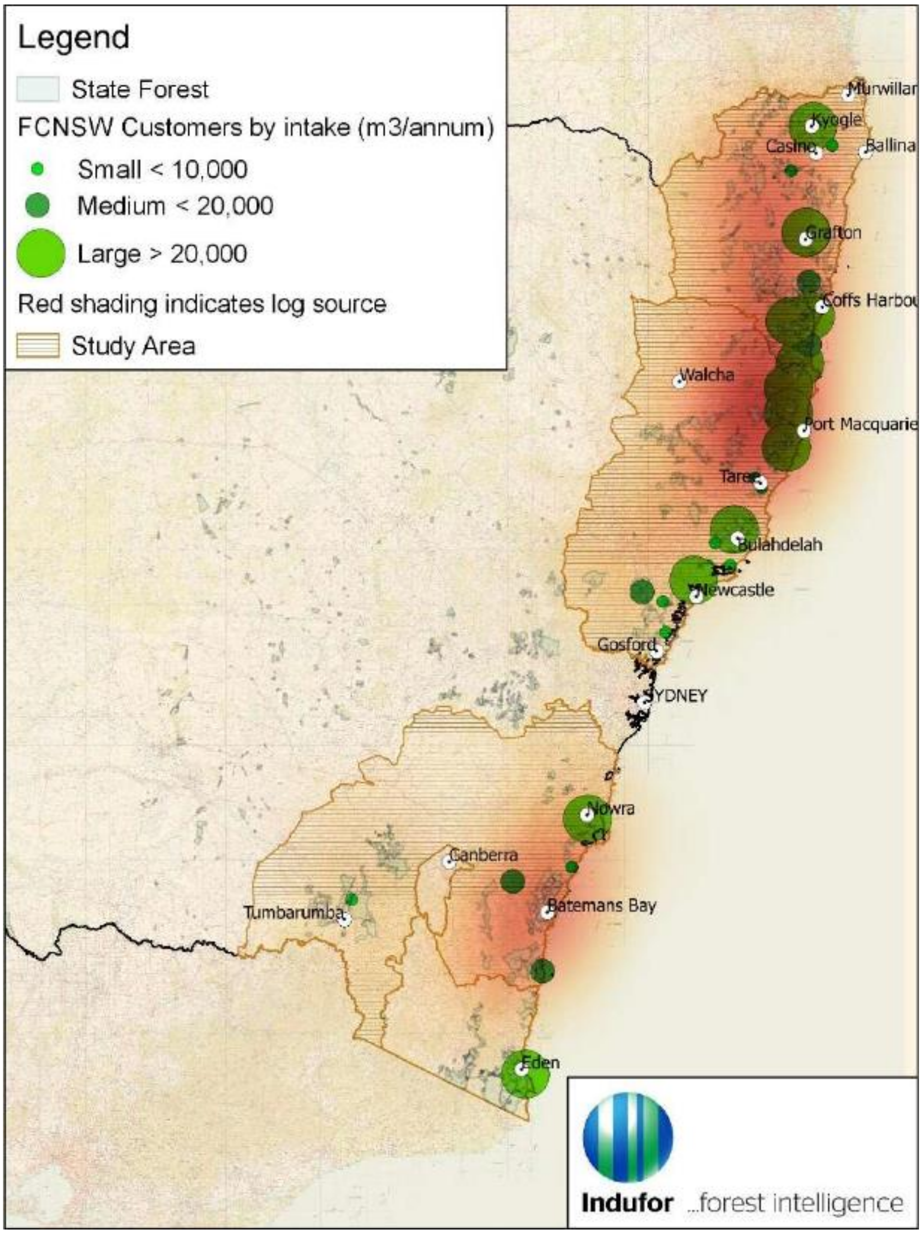
Forestry Corporation supplies over 50 species of native timber to its customers. Five species (Blackbutt, Spotted Gum, Brush Box, Blue Gum and Tallowwood) account for most of Forestry Corporation's native timber revenue. Harvested logs are characterised as 'high-quality' and 'low-quality' sawlogs based on the value of the logs to customers. The value of a sawlog is a function of the size, shape and quality of the timber, which determines the end use of the timber.

Over half of Forestry Corporation's native timber is supplied from forests along the North Coast and South Coast of NSW (Figure B.3**Error! Reference source not found.Error! Reference source not found.**).[22] Forestry Corporation separates native timber supply into six regions which are further disaggregated into supply zones and price zones.[23]

22 Forestry Corporation also supplies timber from the Eden Forest Management Area and its Western region. All sales in the Western region, and most sales at Eden are stumpage sales (discussed further in section B.3.1), which are outside the scope of our review.

23 The six native timber supply regions are the North East and Central regions on the north coast; the Eden and Southern regions on the south coast; and the Western and Riverina regions

Figure B.3 Forestry Corporation's customers and log sources by location



Note: Excludes activity relating to sales sold on a stumpage basis, primarily at Eden, and the Western Region.
Source: Indufor, Native Forest Harvesting and Haulage Review and Benchmarking, Final Report, p 6.

Forestry Corporation does not just produce timber; for over half of its logs, it also manages the harvesting and haulage operations for its customers (depending on their contract terms). Of relevance to our review are Forestry Corporation's harvesting and haulage costs for logs from hardwood native forests (native timber) on the North Coast and South Coast of NSW.[24]

24 In Forestry Corporation's Eden and Western regions, customers generally arrange their own harvesting and haulage services. This is known as a 'stumpage' arrangement and is out of scope for our review as Forestry Corporation does not manage these costs.

B.2 Forestry Corporation's commercial operations for native timber

The forestry supply chain includes:

- forest management and growing (including silviculture)
- log production operations including road and track construction, harvesting and haulage
- primary processing by sawmills, chipmills, pole producers
- secondary processing by board and paper manufacturers
- downstream processing by truss and frame producers, furniture manufacturers
- timber sales and distribution to wholesalers and retailers.[xx]

Forestry Corporation manages the first two stages of the supply chain.

Silviculture is the practice of establishing or regenerating forests, and managing the forest through thinning, pruning, and harvesting to meet specific objectives. Utilising silvicultural techniques can create ideal conditions for regeneration, provide habitat for wildlife and maintain a diverse forest ecosystem. Of increasing relevance in NSW is the retention of trees to meet threatened species prescriptions, and the provision of habitat across harvested areas.

The silvicultural system employed in a region can have a significant impact on the yield, and on the costs associated with managing the retained trees. For example, clearfelling operations[25] average a higher yield and lower cost than the single tree selection operations used in NSW.[26]

While access to forests is provided through existing road and track networks, Forestry Corporation may also construct new tracks to optimise harvesting efficiency, improve drainage or to facilitate rehabilitation.

As noted above, Forestry Corporation manages harvesting and haulage operations for its customers in the North Coast and South Coast regions, through engaging external contractors. Harvesting operations involve tree felling, skidding the logs to roadside, log grading and roadside storage. Haulage operations involve loading logs onto trucks, with trucks usually loaded with a single log product, and transportation.

B.3 Wood supply agreements

Forestry Corporation supplies most of its native timber to sawmills according to WSAs. WSAs are long-term supply commitments (usually 20 years) between sawmills and the Government, most of which were signed between the late 1990s and early-mid 2000s. Table B.1 lists the current WSAs.

25 Clearfelling involves removing all of the trees in an area, and is distinct from other logging systems which leave some trees remaining. Clearfelling is not used in NSW, but is used in other states including some parts of Victoria and Tasmania.

26 Single tree selection involves identifying and harvesting individual or small groups of trees based on their size and age. Forestry Corporation primarily uses single tree selection.

Table B.1 Forestry Corporation's wood supply agreements

Company	Mill locations	Product	Contract term	Sale Type	Allocation per annum (green metric tonnes)
ANWE	Edrom	Pulplog	2018-2033	Stumpage	290,000
ANWE	Edrom	Sawlog	2020-2029	Stumpage	25,000
Boral	Koolkhan Herons Ck, Kyogle	HQ sawlogs	2004-2028	Mill door	163,000
	Narooma, Nowra	LQ sawlogs	2001-2020		
Thora Sawmilling	Thora	HQ and LQ sawlogs	2004-2023	Mill door	42,627
Hurfords Hardwood Kempsey	West Kempsey	HQ and LQ sawlogs	2004-2023	Mill door	8,123
Newells Creek Sawmilling	Bulahdelah	HQ and LQ sawlogs	2004-2023	Mill door	19,807
Adams Sawmills	Bonville	LQ sawlogs	2004-2021	Mill door	21,863
Hurfords Building Supplies	Kyogle, Casino, Karuah, Tuncester	HQ and LQ sawlogs	2004-2023	Mill door	21,753
Koppers Wood Products	Junction Hill	Poles and piles	2004-2023	Mill door	20,260
Aquafern	Warrell Creek	LQ sawlogs	2005-2023	Mill door	18,000
Hayden Timbers	Telegraph Point	LQ sawlogs	2006-2023	Mill door	17,925
CJ & A Woods	Nambucca	HQ and LQ sawlogs	2007-2023	Mill door	7,182
J Notaras & Sons	Grafton	HQ and LQ sawlogs	2004-2023	Mill door	16,579
Big Rivers Timbers	Junction Hill	Veneer logs	2004-2023	Mill door	16,502
Weathertex	Heatherbrae	Pulplog	2023	Mill door	21,000
Ryan & McNulty	Benalla	HQ sawlogs	2004-2030	Mill door	18,500
Braidwood Sawmill	Braidwood	HQ and LQ sawlogs	2020	Mill door	5,886
Williams Timber	Bucca	Poles, Piles, Girders, HQ and LQ sawlogs	2023	Mill door	4,550
Other [a]					<1,000

a There are 63 smaller entities which each purchase less than 1,000 m^3 of timber from Forestry Corporation per annum.

Source: Indufor, Native Forest Harvesting and Haulage Review and Benchmarking, Final Report, p 13.

Most of the WSAs relevant to this review expire in 2023.[27] Boral's WSA is an exception; it was extended to 2028 as a result of previous negotiations. South Coast WSAs expired in December 2020, and are yet to be renewed, pending forest assessments after the 2019–20 bushfires.

The annual volume of native timber that Forestry Corporation must supply to sawmills receiving high-quality sawlogs is set under WSAs. The 20-year period for WSAs was intended to provide resource and investment certainty for customers.

27 The ANWE WSAs are stumpage arrangements, and hence outside the scope of this review.

Starting in 2014, Forestry Corporation commenced a series of allocation buybacks from Boral as it was unable to meet the volumes it was committed to under its WSAs. In addition to financial compensation to Boral, Forestry Corporation provided species-specific commitments for Blackbutt, and extended the WSA to 2028.

Forestry Corporation's volume commitments under WSAs may have incentivised inefficient harvesting and haulage operations. Industry stakeholders have reported receiving unfavourable species, and long haulage distances (and hence high haulage costs) which reduced the profitability of logs received.

Other states generally allocate native timber on a competitive basis:

- In Victoria, native timber has been allocated based on a Request For Proposal (RFP) process on the expiry of existing contracts. However, we note that native timber harvesting will be phased out in Victoria from 2024–25 onwards.[xxi]
- In Western Australia, most contracts are awarded following a competitive process, typically via a public tender or auction.
- In Queensland, most timber resources are sold under long-term sales permits of between five and 25 years.

As WSAs in NSW expire, there is an opportunity to review the approach to allocating in NSW. Opportunities for improved efficiency are discussed in Chapter 6.

B.3.1 Forestry Corporation sells native timber to customers in three ways

WSAs reflect one of three types of sales arrangements:

- **Stumpage arrangement** – Forestry Corporation sells the right to harvest timber from a specific forest area to the customer. The price paid to Forestry Corporation reflects only the value of the timber to the customer, as the customer is responsible for arranging the harvesting and haulage of the timber. Stumpage arrangements are considered relatively straightforward arrangements, and are used where there is a single product, a small number of customers, and where Forestry Corporation's oversight of harvesting and haulage operations is less required.[xxii] Stumpage arrangements are primarily used in the Western Region and Eden Forest Management Area.
- **Delivered price arrangement** – a type of 'mill door' arrangement where Forestry Corporation arranges for the harvesting and haulage of the timber. The customer is charged a bundled price, where Forestry Corporation sets a total combined price for harvesting, haulage, and stumpage, with no disaggregation of the components. Delivered price arrangements are primarily used for low-quality sawlogs, representing over 50% of the log volume sold by Forestry Corporation annually.[xxiii]
- **Delivery charge plus stumpage arrangement** – another type of 'mill door' arrangement where Forestry Corporation arranges for the timber to be harvested and hauled to the customer. The customer is charged an unbundled price, where Forestry Corporation sets prices for the individual harvesting, haulage and stumpage components. Delivery charge plus stumpage arrangements are primarily used for high-quality sawlogs.

Under a delivery charge plus stumpage arrangement, harvesting and haulage costs are directly passed on to customers, who bear the risk of increased harvesting and haulage costs.[28] Conversely, the bundled price in a delivered price arrangement means that the customer is charged a set estimated price, which provides an incentive for Forestry Corporation to minimise these costs.

Forestry Corporation notes that the combination of both types of arrangements, for varying products in an integrated harvesting operation, provides the incentive for it to minimise harvesting and haulage costs for all native timber products.

B.4 Forestry Corporation engages harvesting and haulage contractors

Under agreements where Forestry Corporation is responsible for coordinating harvesting and haulage, it outsources services. The benefits of Forestry Corporation's management of these services include its ability to coordinate harvesting and haulage processes and environmental, health and safety outcomes.[xxiv]

28 For example, if the distance that logs need to be hauled, or the difficulty rating where timber is being harvested, changes between one period and the next.

Forestry Corporation uses a mix of open tender processes and direct negotiations to award harvesting and haulage contracts. Harvesting and haulage contracts are generally up to 5 years in length; this provides contractors with the security to finance equipment and allows both parties to regularly review contract rates.

Forestry Corporation produces an annual harvesting plan to meet its supply requirements for WSAs. Based on this plan, harvesting contractors submit tenders to harvest specific forest coupes. Under current difficulty class matrix contracts, the revenue earned by harvesting contractors depends on the difficulty of the forest coupe being harvested,[29] as well as the products harvested. Harvesting contractors are paid a higher rate for more difficult forest coupes, which reflects the additional cost and time taken to harvest them. Harvesting contractors are also paid a higher rate for more valuable products,[30] to incentivise contractors to maximise the value of resources extracted from the forest, and to reflect the additional time that is necessary for careful extraction.

Haulage contractors are paid according to the volume of logs delivered and the distance travelled.

B.5 Relevant events in the forestry industry

During the review period (1 July 2016 to 30 June 2019), there were 3 key industry changes which affected Forestry Corporation's harvesting and haulage costs:

- a change in approach to determining harvesting contract rates (see section 3.1)
- centralisation of haulage operations on the North Coast (see section 3.2)
- introduction of the Coastal Integrated Forestry Operations Approval (IFOA) (see section 4.1).

Events before and after the review period provide context for our review. A timeline of relevant events is at Table B.3. Rows shaded grey show events outside the review period.

29 Harvesting coupes are categorised according to the difficulty class matrix (DC) system, which determines their difficulty and the corresponding rate paid to the harvesting contractor.

30 For example, poles and piles are more valuable, and therefore attract a higher rate, than pulpwood.

Table B.2 Timeline of relevant events in the forestry industry

Date	Event	Details
2006	Boral-Forests NSW court case	▼ Boral sues Forests NSW (predecessor to Forestry Corporation) for failure to supply the contracted amount of high quality timber ▼ Forests NSW pays Boral $500,000
2011	Boral-Forests NSW court case	▼ Boral sues Forests NSW again for failure to supply the contracted amount of high quality timber ▼ The outcome is confidential
January 2012	The Forestry Act 2012 is enacted and Forestry Corporation of NSW is formed	▼ Forests NSW was a public trading enterprise within DPI ▼ Forestry Corporation is a state owned corporation (SOC)
May 2012	Project 2023 commenced	▼ Steering Committee established to investigate North Coast timber supply issues
June 2014	Project 2023 Steering Committee presents findings	▼ Project 2023 Steering Committee finds that buyback of 50,000m^3 per year of high quality native timber logs from Boral (including 40,000m^3 per year of blackbutt) is the most effective way of bringing harvest levels to an even flow, sustainable yield
2014	Boral renegotiation/buyback	▼ Government accepts Steering Committee recommendation and Forestry Corporation begins buy back of 50,000m^3 of high quality native timber per year from Boral (including 40,000m^3 of blackbutt) for nine years ▼ Boral is paid $8.5 million, receives favourable species commitments and has WSA extended by five years to 2028
March 2016	North Haul Consortium is formed	▼ Five-year haulage contract, featuring a central dispatch facility
2016	Forestry Corporation implements the Difficulty Class (DC) system to estimate harvesting contract rates	▼ Forestry Corporation previously used the crew day rate system
December 2017	Release of IPART's Final Report	▼ Completion of first review of Forestry Corporation's native timber harvesting and haulage costs
June 2018	Allied Natural Wood Exports (ANWE) wins competitive tender for WSA in Eden region	▼ Competitive tender process results in incumbent (Blue Ridge Hardwoods) losing its WSA, as it did not provide a suitable processing and business proposal ▼ NSW Government commits support for workers affected by the change
Mid-2018	Industry-run business certification scheme begins	▼ Co-run by Australian Forest Contractors Association (AFCA) and NSW Government

Date	Event	Details
November 2018	Coastal Integrated Forestry Operations Approval (IFOA) introduced under transitional arrangements	▼ Coastal IFOA replaces 4 regional IFOAs to improve regulatory efficiency ▼ Two-year transition period
July 2019 – March 2020	2019-20 bushfires	▼ Bushfires affect native timber in North Coast, South Coast and Eden regions, with implications for WSA commitments and harvesting and haulage operations
August 2019	Competitive tender process for expired harvest and haulage contracts	▼ Forestry Corporation uses a competitive tender process, rather than direct renegotiation with incumbents, as occurred during the review period
May 2020	Salvage logging resumes on South Coast	▼ Industry returns after bushfires
October 2020	Post-bushfire regulatory changes	▼ Forestry Corporation prosecuted for allegedly felling trees in protected areas within key koala habitats in northern NSW
November 2020	Coastal IFOA fully implemented	▼ All new regulations enforceable, though complicated by 'site specific' conditions post-bushfires
December 2020	Most South Coast WSAs expire	▼ Note: to date, these have not been renegotiated, and are expected to be allocated via a competitive EOI process
March 2021	North Haul haulage contract ends	▼ Impacts on the industry will depend on form of contract when re-negotiated, extended or cancelled
2023	Most North Coast WSAs expire	▼ Twenty-year agreements signed in 2003
2028	Boral WSA expires	▼ Twenty-year agreement signed in 2003 ▼ Extended by 5 years in 2014

Note: Rows shaded grey include events outside the review period.

C Market concentration analysis

To verify Indufor's market analysis, we analysed the market share (by revenue)[31] of harvesting and haulage contractors, both in this review period and the previous review period, using the Herfindahl-Hirschman Index (HHI) of market concentration.

The HHI is an accepted measure of market concentration, which considers the number of participants in a market and their respective market shares. HHI is calculated as:

$$HHI = \sum_{i=1}^{N} s_i^2$$

where s_i is the market share of participant i, and N is the number of participants in the market. High market concentration can result in market players potentially having the power to influence prices, and can contribute to upward pressure on prices.

Markets can be categorised based on their HHI as competitive, moderately concentrated or highly concentrated. The HHI has a maximum value of 10,000, which occurs in the case of a monopoly with 100% market share. Table C.1 summarises the HHI for markets with different numbers of competitors.

Table C.1 HHI for markets with different numbers of competitors

Number of equal-sized competitors	Market share of each competitor	HHI
1	100%	10,000
2	50%	5,000
3	33%	3,333
4	25%	2,500
5	20%	2,000
6	17%	1,667
7	14%	1,429
8	13%	1,250
9	11%	1,111
10	10%	1,000

Source: IPART analysis.

31 Market share can also be estimated by volume. Data was not available to consider this in our market analysis.

Table C.2 presents the HHI for each of the four regional harvesting and haulage markets, in the current review period and previous review period.

The cells marked in red indicate markets with very high levels of concentration and potential market power. In the Upper North and Lower North/Central haulage markets, this very high concentration reflects the monopoly power of North Haul. In the South West, this level of concentration reflects the very small number of contractors in the harvesting and haulage markets.

Table C.2 HHI of harvesting and haulage markets by revenue

	Harvesting		Haulage	
Market	**2014-16**	**2017-19**	**2014-16**	**2017-19**
Upper North	2,982	3,610	4,041	9,658
Lower North/Central	935	1,320	2,967	10,000
South	2,168	2,615	2,024	2,484
South West	10,000	8,925	10,000	8,725

Note: Red cells indicate markets which are very highly concentrated (noting that a monopoly has an HHI value of 10,000). Markets with HHI values between 1,500 and 2,500 are considered moderately concentrated – this is equivalent to markets with 4 to 7 market players with equal market shares. Markets with an HHI value below 1,500 are considered competitive – this is equivalent to having 8 or more market players with equal market shares.

Source: Data from Forestry Corporation; and IPART analysis.

Overall, the number of harvesting contractors increased during the review period, from 20 to 33, driven by an increase in small contractors in the market. This recent increase is a move against a broader trend of declining harvesting contractor numbers; which fell by 15 contractors between 2005 and 2019.

In contrast, the number of haulage contractors fell from 15 to 10 during the review period, correlated with the introduction of the North Haul consortium in the Upper North and Lower North/Central markets. The number of haulage contractors has otherwise remained steady between 2005 and 2019.

D Other issues raised in consultations

Consultations with harvesting and haulage operators identified a number of other issues, including:

- challenges in financing capital investment under 5-year harvesting and haulage contracts
- uncertainty about future operations, related to South Coast WSAs expiring in December 2020
- challenges in attracting and retaining workers, particularly in the South Coast region
- sustainability of the native timber resource.

These issues have implications for contractor viability, and ultimately the viability of native timber harvesting and haulage operations. However, we found that they did not directly affect harvesting and/or haulage costs within the review period, and that maintaining industry viability is not directly relevant to our review scope.

D.1 Issues raised by industry stakeholders

Contractor and industry viability was a key theme raised in our consultations with harvesting and haulage contractors. While these issues did not result in increased harvesting and haulage costs in the current review period, contractors noted that a reduction in contractor viability could reduce market competition, which could potentially lead to higher harvesting and haulage prices in future review periods.

Viability is an acute issue for the industry as it recovers from the 2019−20 bushfires, and is a particular concern for contractors on the South Coast, where the ongoing sustainability of the forest resource is least certain.

Through consultations, some industry stakeholders cited challenges in financing capital investment under current 5-year harvesting and haulage contracts. However, while longer contract terms could provide greater revenue certainty to invest in capital, they can reduce flexibility and the ability to negotiate changes in rates over time. Industry stakeholders were divided on whether current contract lengths or longer contract lengths would be appropriate. We consider that differences are likely to reflect contractor business models rather than an industry-wide issue requiring resolution.

Stakeholders also proposed alternative risk-sharing contract models, where Forestry Corporation invests in capital which it leases to contractors. While Forestry Corporation may be able to achieve economies of scale in capital equipment investment, it is less likely to be attuned to market forces than contractors. We consider that this approach could lead to inefficient investment in capital.

Similarly, the other challenges relating to industry uncertainty, affecting contractor viability, do not arise from inefficient functioning of the market or barriers to entry. Instead, they reflect higher costs of harvesting and haulage operations due to environmental factors and change in the forestry resource over time. Difficulties in attracting and retaining workers, and business exits reflect the operation of a competitive and functioning market, and it is outside our review scope to recommend interventions to address this.

However, the NSW Government may consider industry viability and support for displaced workers as it supports the industry in bushfire recovery. Current support includes the Bushfire Industry Recovery Package which provides funding to assist with haulage of burnt timber from out-of-area forests.[xxv]

Once salvage operations are complete (from around mid-2021 onwards), demand for harvesting and haulage operations is likely to fall.[32] The NSW Government has been working with the Australian Forest Contractors Association (AFCA) – the national body for forestry contractors such as harvesting and haulage operators – in initiatives to support businesses. One such initiative is ForestFit, an industry-run business certification scheme, underpinned by accredited and industry-endorsed training modules, which may contribute to the ongoing viability of harvesting and haulage businesses.[xxvi]

32 IPART consultation with NSW DPI, 4 November 2020.

[i] NSW Government, NSW Forestry Industry Roadmap, accessed 23 December 2020.
[ii] Information from Forestry Corporation, 7 December 2020.
[iii] Information from Forestry Corporation, 7 December 2020.
[iv] Indufor and NERA Economic Consulting, *HFD Harvest and Haul Audit Final Report*, September 2017, p 75.
[v] Data from Forestry Corporation (C6 Internal review, North Haul (002)), 19 October 2020.
[vi] Data from Forestry Corporation (C6 Internal review, North Haul (002)), 19 October 2020.
[vii] Data from Forestry Corporation (C6 Internal review, North Haul (002)), 19 October 2020.
[viii] Information from Forestry Corporation, 7 December 2020.
[ix] Information from Indufor, 14 December 2020.
[x] Information from Indufor, 14 December 2020.
[xi] NSW Environment Protection Authority, Coastal Integrated Forestry Operations Approval (IFOA) remake and FAQ: Commencement of the Coastal IFOA, p 2, accessed 27 January 2021.
[xii] Indufor, Native Forest Harvesting and Haulage Review and Benchmarking – Part B, Draft Report, p 4.
[xiii] NSW Environment Protection Authority, Update on forestry operations and regulatory activities, accessed 22 December 2020.
[xiv] Indufor, Native Forest Harvesting and Haulage Review and Benchmarking – Part B, Draft Report, p 8.
[xv] Indufor, HFD Harvest and Haul Audit, Final Report, September 2017, pp 26-28.
[xvi] Indufor, Native Forest Harvesting and Haulage Review and Benchmarking, Final Report, February 2021, p 84.
[xvii] Indufor, Native Forest Harvesting and Haulage Review and Benchmarking, Final Report, February 2021, p 21.
[xviii] GHD, NSW Department of Primary Industries Review of Coastal Hardwood Wood Supply Agreements, Final Report, March 2017, p 15.
[xix] Indufor, Native Forest Harvesting and Haulage Review and Benchmarking, Final Report, February 2021, p 4.
[xx] Indufor, Native Forest Harvesting and Haulage Review and Benchmarking, Final Report, February 2021, p 7.
[xxi] ABC News, Victorian Government announces multi-million-dollar plan to end native logging by 2030, accessed 5 February 2021.
[xxii] Information from Forestry Corporation, 24 September 2020.
[xxiii] Indufor, Native Forest Harvesting and Haulage Review and Benchmarking, Final Report, February 2021, p 76.
[xxiv] Indufor, Native Forest Harvesting and Haulage Review and Benchmarking, Final Report, February 2021, p 21.
[xxv] NSW Government, Bushfire Industry Recovery – Supply Chain Support Grants – Haulage Grants, accessed 22 December 2020.
[xxvi] Australian Forest Contractors Association (AFCA), Achieving forest contracting best practice, accessed 1 March 2021.