**REPORT ON PROCEEDINGS BEFORE**

# PORTFOLIO COMMITTEE NO. 4 - CUSTOMER SERVICE AND NATURAL RESOURCES

## LONG TERM SUSTAINABILITY AND FUTURE OF THE TIMBER AND FOREST PRODUCTS INDUSTRY

**CORRECTED**

**At 814-815, Parliament House, Sydney on Tuesday 24 May 2022**

**The Committee met at 9:30.**

## PRESENT

The Hon. Mark Banasiak (Chair)

The Hon. Scott Barrett

Mr Justin Field

The Hon. Taylor Martin

The Hon. Mick Veitch (Deputy Chair)

## PRESENT VIA VIDEOCONFERENCE

The Hon. Peter Poulos

The Hon. Peter Primrose

* Please note:

[inaudible] is used when audio words cannot be deciphered
[audio malfunction] is used when words are lost due to a technical malfunction
[disorder] is used when members or witnesses speak over one another.

**The CHAIR:** Welcome to the seventh and final hearing of the Portfolio Committee No. 4 inquiry into the long-term sustainability and future of the timber and forest products industry. I acknowledge the Gadigal people of the Eora nation, who are the traditional custodians of the land on which we are meeting today. I pay respect to Elders past, present and emerging, and celebrate the diversity of Aboriginal peoples and their ongoing cultures and connections to the lands and waters of New South Wales. I also acknowledge and pay my respects to any Aboriginal and Torres Strait Islander people joining us today.

Today we will hear from a number of stakeholders, including academics, industry representatives and New South Wales government agencies. I thank everyone for making the time to give evidence to this important inquiry. While we have many witnesses with us in person, some will be appearing via videoconference. I ask for everyone's patience through any technical difficulties we may encounter. If participants lose their internet connection and are disconnected from the hearing, they are asked to rejoin the hearing by using the same link as provided by the Committee secretariat.

Before we commence, I make some brief comments about the procedures for today's hearing. The hearing will be broadcast live via the Parliament's website. The proceedings are also being recorded and the transcript will be placed on the Committee's website when it becomes available. Consistent with our current COVID protocol, the hearing room is physically closed to members of the public. In accordance with the broadcasting guidelines, media representatives are reminded that they must take responsibility for what they publish about the Committee's proceedings. While parliamentary privilege applies to witnesses giving evidence today, it does not apply to what witnesses say outside of their evidence at the hearing. Therefore, I urge witnesses to be careful about comments you may make to the media or to others after you complete your evidence.

Committee hearings are not intended to provide a forum for people to make adverse reflections about others under the protection of parliamentary privilege. In that regard, it is important that witnesses focus on the issues raised by the inquiry terms of reference and avoid naming individuals unnecessarily. All witnesses have a right to procedural fairness according to the procedural fairness resolution adopted by the House in 2018. If witnesses are unable to answer a question today and want more time to respond they can take the question on notice. Written answers to questions taken on notice are to be provided within 21 days. If witnesses wish to hand up documents they should do so through the Committee staff. For those participating in today's hearing via videoconference, I ask everyone to state their name before speaking and to mute their microphones when they are not speaking. In terms of the audibility of the hearing, I remind both Committee members and witnesses to speak into the microphone. Finally, would everyone please turn their mobile phones to silent for the duration of the hearing.

**Professor ROBERTA RYAN**, Local Government and Executive Director, Institute for Regional Futures, University of Newcastle, before the Committee via videoconference, affirmed and examined

**The CHAIR:** I welcome our first witness. Ms Ryan, would you like to make a short opening statement? If you could keep it to two to three minutes and we will then begin questioning.

**ROBERTA RYAN:** Yes, certainly. We were engaged through a competitive tender process about 18 months ago to do two pieces of economic assessment on the establishment of the great koala national park. I won't go into the details of the great koala national park; I assume people know what that proposal is. We undertook two pieces of work. Firstly, there was an economic impact assessment, which calculates the direct net and indirect effects of an increase in investment in the proposed park and the spending related in the five LGAs which the proposed park would cover over 15 years.

We also undertook an economic benefit assessment, which places a dollar value on how much the community is willing to pay to preserve biodiversity. I was happy to briefly share with the Committee the findings of that. I can either do that now or at questioning. I can give you the headlines in two minutes, if you would like. To establish and activate the park, we calculated it requires about $145 million capital investment over 15 years and about $128 million in terms of operating expenditure. We calculated the additional visitation and the value of that and the direct and indirect economic output of that, which is calculated at $1.18 billion for the region. This will create an additional 9,810 jobs in the region by the end of the 15 years; lead to 675 job losses in the State forest native logging industry in the first 10 years; and significant biodiversity value. That is the nature of the data. I am happy to talk it through more, but that is just the quick headlines for you.

**The CHAIR:** Thank you. The Committee has resolved to do free-flow questioning, so you will get questions from all different Committee members. I am looking for someone to open up the batting.

**Mr JUSTIN FIELD:** I am happy to start, Chair. Thank you for your time today, Professor Ryan. Are you able to provide the report in full to the Committee?

**ROBERTA RYAN:** Yes indeed, including detailed numbers and summary documents. I am absolutely happy to. It is a public report.

**Mr JUSTIN FIELD:** It is on the public record now?

**ROBERTA RYAN:** It is, but I'll make sure the Committee has access to it.

**Mr JUSTIN FIELD:** That would be great. I would like to delve into it in a little bit more detail because the Committee did visit some of the sites in the proposed area. We have seen the area of forest and also spoken to some of those that currently work in the timber industry in the public native forestry estate up there. Your analysis, though, to be clear, is that there is a pretty overwhelming shift in job opportunities—the creation opportunities versus those lost in the sector. Of those 675 job losses that you identified in the native forest logging sector, were they all harvesting and haulage and mill jobs, or were some of them forest management? I assume there are quite a lot of management jobs in a national park that would be required additionally to what is currently on the ground up there as part of the national parks or the public sector more generally.

**ROBERTA RYAN:** That is correct. Yes is the answer to both of your questions.

**Mr JUSTIN FIELD:** Do you have any idea of how that would offset? How many of those management jobs currently managing the State Forests would still be employed in the management of the national park?

**ROBERTA RYAN:** No, it is difficult to assess that. In terms of the job numbers from Forestry, we use its own data for the calculation of those numbers. We did not factor in the management jobs for managing the national park.

**Mr JUSTIN FIELD:** Apologies, my head is swivelling a bit because I have you on a screen over here and a screen over here. I appreciate you are probably looking at me there—

**ROBERTA RYAN:** I am.

**Mr JUSTIN FIELD:** —and it is quite awkward to engage with you in this questioning. I look forward to seeing your report in full and having a read. Whilst we were up on the North Coast, there was an announcement about changes to the private native forestry rules which, I think, are designed by the Government to expand the opportunities for private native forestry. Have you got any insights into how that would offset some of those job losses in the sector and provide alternative employment for harvesting, haulage and other forest management workers who are currently in the public native forestry sector?

**ROBERTA RYAN:** No, I don't. Sorry, I haven't looked at that. This work was relatively narrowly scoped in terms of just looking at that potential economic uplift of the establishment of the park and then doing that calculation of the economic value and the jobs.

**Mr JUSTIN FIELD:** To the narrow specifics in your report, can you give us an insight into the 9,810 jobs? We heard evidence on the South Coast of a disdain for the general sense that you can replace forestry jobs with nature-based tourism jobs or green tourism jobs. Can you give us a bit of a breakdown and a sense of the tick up in those, and how quickly those jobs come into play, according to your analysis, over that 15-year period?

**ROBERTA RYAN:** Yes, thank you. The economic impact analysis calculates the net direct and indirect effects of the investment in the park. As part of that we calculated it into three types of investment in terms of the capital investment over the 15 years. We chose a time period of 15 years for reasons I can go into in terms of the data. That includes mapping and tenure changes, construction of the visitor centre, visitor infrastructure, traps and trails—that kind of investment—as well as operating expenditure, which was the $128 million. That is ongoing construction habitat management and the operation of park-based activities. So the numbers of the jobs that we used are not just jobs that increase as a result of the uplift in tourism; they include the establishment of the park, the ongoing park management, as well as the jobs estimated as a result of the additional visitor numbers. So it is the three kinds of jobs.

We estimated an additional one million visitors will spend $412 million in the region, and this is calculated as the spend in the five LGAs. Some of that spend will not be even across the five LGAs, but that was the spatial area. Based on that additional total of direct and indirect economic output, it's the $1.18 billion in the region that leads to the assessment of the number of jobs. The 9,810 jobs is the total job creation over the period and at the end of the 15 years. In terms of the job losses, the calculation—all of these numbers are extremely conservative, for reasons which you could imagine. In terms of job losses, using the State native forestry logging industry's data, we calculated 675 job losses over a 10-year period, so the time periods do vary. That is the detail. Our estimate is that the medium-term job losses in the State native forestry logging industry will be, obviously, more than compensated by the creation of new jobs in the national park in terms of management, ecotourism and, particularly, opportunities for ownership and job opportunities for Aboriginal and Torres Strait Islander people.

**Mr JUSTIN FIELD:** Does your report give any consideration to what would be needed as part of the economic transition for those timber mills and the workers in the sector currently?

**ROBERTA RYAN:** We did it at a very high level by referring to the precedent from the New South Wales Government's industry transition support package, which we estimated at $250,000 per full-time equivalent over the 10 years and the buyback of any existing wood supply arrangements for up to $30 million. We have included those calculations in our numbers, although we note that there is no impact on logging on private land or hardwood plantations. We were just looking at the State forestry numbers.

**Mr JUSTIN FIELD:** So that's about $100,000 per worker in the sector more than, I think, was committed to Blue Ridge down in—

**The Hon. MICK VEITCH:** Eden.

**Mr JUSTIN FIELD:** —Eden. Where did you arrive at the 250?

**ROBERTA RYAN:** I think we took advice in terms of what would be a reasonable number to calculate. I can take that question on notice to be more precise.

**Mr JUSTIN FIELD:** Combining the 250 and the package to buy out the wood supply contracts, what did you value that at in your report in total?

**ROBERTA RYAN:** Sorry, is that [disorder]?

**Mr JUSTIN FIELD:** The combination of the $250,000 per worker in the sector and the buyout of the contracts that would be required to offset the timber losses from the great koala national park—what did you value that at in total?

**ROBERTA RYAN:** It was up to $30 million in terms of the buyout costs.

**Mr JUSTIN FIELD:** I have one more quick question. You're a policy expert in this space, and an academic. You've considered these issues of economic transition before. Those can be sensitive issues as industries naturally decline and times change. Can you offer any advice to the Committee on what we should be recommending to the Government in terms of if they were to engage in this sort of transition? What should they be doing, based on your experience, to make sure that those whose livelihoods are changing—their needs are met and the greatest opportunities from that change can be gifted to the community in that region?

**ROBERTA RYAN:** It's advice that I think you would find obvious. It's about involving people in these decisions and making sure that this is treated as a long-term exercise, but recognising the inevitability of some of these things. Of course, a planned transition is better than an unplanned transition. I accept the arguments that are often made that tourism jobs and barista jobs—many of these things are private sector jobs that require investment in hotel rooms, accommodation, visiting facilities and so on, and they're not a direct one for one. But, certainly, in the management of national parks, there are a lot of equivalent skills in terms of the kinds of management—the management of the land as well as the management of the facility and the national parks. Many of those jobs are equivalent. You do this kind of research and do not announce it before you start. I think the numbers are pretty compelling in terms of well over 9,000 jobs with, even if we are out by a factor of 10, job losses of 1,000 people.

**The Hon. MICK VEITCH:** I have a couple of questions following on from Mr Field. As a part of the job transition, did you also look at the impact on the mills in the industry up there?

**ROBERTA RYAN:** No. That wasn't part of the work, sir.

**The Hon. MICK VEITCH:** It was outside of the scope. So that is just another area of economic impact that is yet to be assessed.

**ROBERTA RYAN:** Correct.

**The Hon. MICK VEITCH:** As I understand it, this work was looking at the impact on five LGAs. Is that correct?

**ROBERTA RYAN:** Yes. It was scoped according to the nature of the proposal for the great koala national park, so that was the spatial area that was used. That national park is proposed to establish a 315,000-hectare reserve on the mid North Coast. That is located across the areas of Bellingen, Clarence Valley shire, Coffs Harbour shire, Kempsey and Nambucca. The geographical scope of the study was determined by the proposal for the location of the great koala national park.

**The Hon. MICK VEITCH:** When you were assessing and determining the impact on job losses from the timber sector, and the jobs then created with the great koala national park proposal, did you drill those down into communities themselves or is it just across the whole of the park footprint?

**ROBERTA RYAN:** Yes, there is some data in the report as to which geographical areas we assessed would get more uplift in terms of visitor accommodation, tourism and so on. On the job creation side, it is the case that the report shows some of the spatial location of where we estimate those jobs would be. In other words, the 9,000 or so jobs won't be created evenly across the five LGAs. You might be more interested in where the job losses are.

**The Hon. MICK VEITCH:** Yes.

**ROBERTA RYAN:** Again, that is mapped according to the data that we had on where those jobs currently are located. It's uneven.

**The Hon. MICK VEITCH:** As a part of this exercise—I'm not sure this is part of the scope. Did it involve some sort of industry-wide skills audit of what skills are currently there and what skills would be required?

**ROBERTA RYAN:** No. But, in terms of the question that I just had, that would be an important piece of follow-up work. In terms of understanding where the job capability is in this part of the world as well, yes, it would be a useful thing to do.

**The Hon. SCOTT BARRETT:** Professor, I'm with the $412 million visitor expenditure a year and the 908,000 jobs. You mentioned baristas. So that includes the money they're spending in shops and that sort of stuff when they come—

**ROBERTA RYAN:** Correct, yes. Based on the visitor spend data, yes.

**The Hon. SCOTT BARRETT:** On the other side of the ledger, the jobs lost, did we take into consideration mechanics, the furniture—the money that people that have lost their jobs would've spent on houses in town, school fees, club memberships or the tyre shop? Have we included that in there?

**ROBERTA RYAN:** Yes, we did. It's a formula that's used in terms of the direct and then what we call the indirect jobs, which are the sort of jobs that you're talking about—spend in the community from those workers, yes, in terms of the mechanics and all of that kind of stuff. There's a way to calculate that formula in terms of direct and indirect job losses and the consequences of that.

**The Hon. SCOTT BARRETT:** The 670, or whatever you said, that is not just forestry workers, that includes the mechanics and the guy in the furniture shop?

**ROBERTA RYAN:** Well, 675 is the direct job losses. The expenditure calculations include direct and indirect expenditure, but don't include—sorry, which is your question I think—indirect job losses. If that is your question?

**The Hon. SCOTT BARRETT:** Yes. The 908,000 is apples, compared to the 670 oranges?

**ROBERTA RYAN:** No.

**The Hon. SCOTT BARRETT:** The jobs you are counting there include the barista and the tour operators, but the jobs lost don't include the mechanic and the home repair guy et cetera?

**ROBERTA RYAN:** The job losses are the direct jobs, yes.

**The Hon. SCOTT BARRETT:** So they are different numbers. Is it the same with the expenditure?

**ROBERTA RYAN:** No, the expenditure figures include both the direct and indirect, if I can put it that way. The job loss number is direct job losses only.

**The Hon. SCOTT BARRETT:** And the money lost out of the area doesn't include the counter lunch that the forestry worker gets on Saturday afternoon?

**ROBERTA RYAN:** Yes. One assumes that the State park management people have the same kind of engagement with the mechanic needing somewhere to live as well.

**The Hon. SCOTT BARRETT:** But a lot of the money being spent in the town is outside money being spent, not money on school fees and club membership and those things?

**ROBERTA RYAN:** The jobs that are created though is money that is being spent in the community by those workers.

**The Hon. SCOTT BARRETT:** Yes.

**ROBERTA RYAN:** I hear what you are grappling with. I understand what you are grappling with.

**The Hon. SCOTT BARRETT:** The jobs being created include the barista but the jobs being lost don't count the tyre shop worker?

**ROBERTA RYAN:** That's correct, but the expenditure figures do.

**The CHAIR:** The direct jobs for national park management, how were those figures worked on? No offence to the Government, but it has history of underfunding national parks and let management run on the smell of an oily rag. What were those staffing figures based on and how does that compare to the number of staff that would be working in the forest at the moment?

**ROBERTA RYAN:** These are difficult numbers to get. Again, if I can put this tactfully, we didn't secure direct cooperation from the Government in the process of doing this study. We relied on data that was published with respect to all known jobs for management of national parks. It is quite detailed in the report, and again I can draw that out and send that to you as a specific response. But we have to use the published estimates in terms of the operating expenditure, which includes the habitat management and the operation of park-based activities. Those are based on historical numbers in terms of the job management and operating employment numbers, which again I think would be fair to say are generally fairly low numbers.

**The CHAIR:** Off hand, can you tell us what the full-time equivalent staff would be for this national park? Did you go into that much detail?

**ROBERTA RYAN:** Yes, we did. I can't do it now but I can provide that to you.

**The CHAIR:** Did you look at whether this park would charge a fee for entry like other more metropolitan national parks as part of its economic modelling?

**ROBERTA RYAN:** No.

**The CHAIR:** How many of the 9,800 jobs did you say were direct and how many were indirect? I can't remember whether you said that in your summary.

**ROBERTA RYAN:** No, I don't think I did.

**The CHAIR:** I was trying to scribble it down, but I could not scribble quick enough.

**ROBERTA RYAN:** We calculated it at 9,800 additional full-time job equivalents. That was the job creation number based on the expenditure estimates after those three phases—you know, the park establishment, the construction phase and the operation phase—plus the tourism jobs. So the job numbers come from the estimates of those three activities.

**The CHAIR:** But you did not break it down in terms of how many were based on the baristas and the tourism?

**ROBERTA RYAN:** Yes, we have got that. We do have that breakdown for that 9,800.

**The CHAIR:** Would you be able to provide that on notice for us?

**ROBERTA RYAN:** Absolutely. Yes, no problem, I am happy to pull it out. The report is a bit long and turgid, I am afraid. I will pull out those questions that you are asking me.

**The CHAIR:** That would be great. In terms of those, I guess you would call them indirect jobs, ecotourism-based jobs, did you get a sense of how many of them would be permanent, temporary, casual or seasonal?

**ROBERTA RYAN:** No.

**The CHAIR:** A lot of tourism work is seasonal.

**ROBERTA RYAN:** Yes, that is correct. No, we did not. We use the visitor estimates and expenditure estimates and then turn it into jobs.

**The CHAIR:** In answer to a question from the Hon. Mick Veitch, you said you did not include the mills and the impact on the mills. Why was that? Was that not included in the scope by the people that put the tender up?

**ROBERTA RYAN:** It is just availability of the data.

**The CHAIR:** The mills did not provide the data?

**ROBERTA RYAN:** We did not have the data on that yet.

**The CHAIR:** Is it the same thing with the five LGAs? Is that the same reason why you only looked at five LGAs? We know from wood supply agreements that there is a lot of travel with a lot of this wood. It is going all around the State; it is not necessarily staying in the south. There is wood travelling up from the south to the mid North Coast. Was that a limit of the tender process as well, that you only looked at those five LGAs?

**ROBERTA RYAN:** Yes. Because we were looking at the economic impact of the establishment of the great koala national park, that was the scope of our permission. We looked at the geographical location of the proposed great koala national park and those 315,000 hectares—that is, the proposal for the reserve for the great koala national park. That is its geographical location. So it is the State forestry activity in those five LGAs.

**The Hon. SCOTT BARRETT:** By the same token, I guess we did not look at the extra costs that would have to come from importing that wood.

**ROBERTA RYAN:** Correct.

**The CHAIR:** I guess the point I am trying to get to is that it is probably a bit of an oversight in this report that it does not look at the impact on the mills. Not having read the full report, I can't comment on the rest of it but I think that—

**The Hon. MICK VEITCH:** Or the logistics industry.

**The CHAIR:** Yes, or the logistics industry. That probably needs to be delved into before the Government considers its decision.

**ROBERTA RYAN:** Yes.

**The Hon. SCOTT BARRETT:** I have one quick question. My understanding of State forests is that they are pretty open to access and people can go in there. What would be allowed to happen in the national park that is not allowed to happen in a State forest?

**The CHAIR:** Nothing.

**ROBERTA RYAN:** That is a policy question, I am afraid. I do not know that I can answer that fairly. As I said, I know it is irritating and it was irritating for us when we were doing this work. We were engaged to assess the economic impact of the establishment of the great koala national park. We did not have that lens as part of this work.

**Mr JUSTIN FIELD:** Just on that, Professor Ryan, I know there are some who would be critical of the idea of taking forests out of forestry but also the other public and private uses, apiary and the like, and putting it into national parks. Would there be a lot of difference in terms of the economic opportunities if it was managed as a great koala park but with the features of a State forest with different types of public access and not as a national park but a State forest that was not logged and primarily managed for its conservation values? Would there be a lot of difference in terms of the economic opportunities that would create?

**ROBERTA RYAN:** I do not think I am in a position to fairly answer that question.

**The CHAIR:** That pretty much takes us right up to time. Thank you, Professor, for your insight and giving evidence today. You took a few questions on notice. The Committee secretariat will be in touch and you will have 21 days to respond. Once again, thank you for your time this morning.

**ROBERTA RYAN:** My pleasure. Thanks for the opportunity and good luck with your work.

**(The witness withdrew.)**

**Mr DEAN KEARNEY**, Senior Manager Planning, Forestry Corporation NSW, on former affirmation

**Mr DEAN ANDERSON**, Regional Manager Snowy Region, Forestry Corporation NSW, on former affirmation

**The CHAIR:** Welcome to the next session of today's hearing. We now welcome witnesses from Forestry Corporation NSW. Would either of you like to make a short opening statement?

**DEAN KEARNEY:** I do have an opening statement. I will try and make it short; I will give it a go. Forestry Corporation is pleased to support the inquiry. We thank the Committee for inviting us again here today. Since we last appeared formerly here in Parliament House, we have been pleased to host the Committee at a range of locations and operational sites. You have seen our major production nurseries near Tumut, native forests on the South Coast and the North Coast, hardwood plantations, softwood plantations, as well as our award-winning ecotourism facility at Sealy Lookout. We also heard from our partners there, the local Aboriginal corporation. We note the submissions and evidence provided to the Committee that there is some strong interest in a few general subjects. I would like to take the opportunity to provide some perspective on some of those matters, specifically biodiversity and carbon in the context of native forest management and also the current timber shortages and supply issues across both hardwood and softwood.

In regards to biodiversity and native forests, I would like to provide some context relating to the New South Wales forest landscape. New South Wales has a forest estate in excess of 20 million hectares, and it is significant on a global scale. Within that 20 million hectares, around six million are set aside in formal reserves—the national park estate. Another two million are dedicated as State forest, which we manage as Forestry Corporation. There are around about three quarters of a million hectares in other Crown lands. The remainder, which is actually the majority, is a combination of forest and leasehold on private lands. The reserve system—the six million hectares of forest—was expressly established under the RFAs, the regional forest agreements, to include the forest with the highest conservation value across the public forest estate. The State forests are dedicated to multiple purposes, which include timber harvesting. In the forests where we produce timber and wood products, it is important to understand that this is done in a sophisticated way—a way that is fundamentally designed to meet ecologically sustainable forest management objectives.

First, in terms of describing that process, which I would like to do, around half of our forests are permanently dedicated to conservation. They are mapped and permanently protected, either as a forest management zone, an old-growth area of rainforest, a riparian zone, a threatened ecological community or various other designations. This effectively provides a continuity of undisturbed forest as a continuous network of habitat in and around the areas where timber is harvested. That network is supplemented by a range of measures that are applied at the time of timber harvesting. A range of surveys are undertaken to identify and set aside habitat and food resources for wildlife, including feed and habitat trees, hollow-bearing trees for various bird species, koalas, gliders and a range of other species. In fact, every species and population listed in the Biodiversity Conservation Act 2016 has been considered in the design of those measures—the Coastal IFOA. The Coastal IFOA sets out to ensure that the forest-dwelling species that utilise our forests can coexist with regulated timber harvesting. These conditions are methodically implemented by our staff in a planning process that takes many months.

In this process, we utilise the best available technology to manage operations. I hope you had a chance to look at that when you visited our field sites. It involves solving some really highly technical challenges, not just in identifying the important habitat or the trees that must be retained but also in managing electronic mapping and GPS technology in remote environments. But they are challenges that we have striven hard to design and implement because they allow us to not only do our jobs to the highest standard possible but also demonstrate, through the collection of data in all of our operations, in any given year the identification and protection of many thousands of hollow-bearing trees, many thousands of feed trees and various other trees kept for habitat or seed purposes. We also monitor operations regularly. There are dedicated staff within our organisation for doing this. We are subject to external audit by either the EPA or DPI, depending on the type of harvesting it is. We are subject to external certification auditing to obtain the Responsible Wood or Australian forestry standard.

On top of this, the New South Wales forest management system, which we are one part of, undertakes a range of monitoring and research to ensure that our forest management approach is adaptive and utilises the best available science to inform our forest management practices. There is also a wider balance that we must achieve. That is about ensuring that our operations are sustainable in the long term. It is important to ensure that our forests can provide a continuous supply of renewable wood products in perpetuity. So to this end, we maintain wood supply modelling across 100 years in our native forests and over multiple rotations in softwood forests that set the sustainable limit for harvesting in the current year. Those calculations are regularly updated. They are informed by new in-forest measurements, new remote sensing data and continuous modelling improvements. These processes are also fundamental to understanding and managing positive carbon balances from our State forests.

We note that the international auditing of the Intergovernmental Panel on Climate Change recognised that sustainably managed production forest can maintain carbon in growing trees, produce an annual yield of timber and deliver a sustained climate mitigation benefit. So essentially our wood products are carbon positive. Our forest management system and timber harvesting, when done sustainably, can be part of the solution to climate change. So not only do we sequester the carbon in the forests that we grow but we also store it in the products that we produce. We can also substitute wood products for more carbon-intensive and polluting alternatives.

In relation to current timber and wood product shortages, the timber products that we grow are provided to industries for many and varied purposes that you would have seen during your studies. Renewable timber that communities need for homes and infrastructure is one part of it. But there is also power poles, timber for pallets for goods transport, paper and packaging, and a range of other products.

In terms of timber shortages and supply, it is worth noting that the State forest estate has never been able to supply all of the needs of New South Wales or Australia. Australia remains a net importer of wood products. The 2019-20 fires were a very significant event for us, and there were a lot of impacts across a lot of our forests. But we have been responding to that in a number of ways, including recalculating sustainable and long-term yields. In particular, in the softwood plantations, I am happy to report that we are well ahead of our planting target—or our replanting target—and we will have fully restocked our fire-affected plantations by 2026. Those plantations are actually growing really well because of the prevailing conditions we have had since then. I can report that just yesterday we started our planting program for this season, but we are planning to have well over 10 million seedlings again planted this year.

In the native forest we undertook modelling immediately after the fires to determine, through a modelling process, any adjustments that immediately needed to be undertaken regarding supply levels. We are now working through a process of updating our models within field inventory and that is all happening ahead of the scheduled RFA review in 2023. That is an update that I wanted to provide the Committee, and I thank the Committee for the opportunity to answer questions.

**The CHAIR:** When we were in Oberon and visiting the Essington State Forest, one of the Forestry Corp staff there mentioned that they had gone out to a couple of land auctions to get a taste of what would be required to purchase more land for softwood plantations. They said that they were totally outbid. I wonder, what is the magical figure, in your mind, that you would be prepared to pay for new land for softwood plantation? You might not be able to give an exact figure, but where is your cut-off point in terms of price per hectare?

**DEAN ANDERSON:** Especially seeing how one of my competitors is sitting behind me—we compete for land—I cannot give you the exact figure. We would look to put something together formally. One of those auctions, it went for 300 per cent of what we were considering. So we will put something in writing to you separately.

**The CHAIR:** That would be fine. You noted in the opening statement that we have never been self-sufficient in being able to supply our own needs. Can you give the Committee a sense of what it would take, or how far out we are from being self-sufficient? What would it take for us to supply our own needs? Is that well beyond our capabilities in terms of land availability?

**DEAN ANDERSON:** Potentially, yes, in that we import about 30 per cent of our timber need. Roughly, there is another 30 per cent fold in the land that we would need, at a minimum, to be able to meet that. The other thing is matching the different wood products for what we use. At present, a lot of the hardwood is used for lintels and beams, where you needed those high-strength products. They have been replaced with LVL over time. At the moment, about 40 to 60 per cent of our LVL comes from Russia. Basically, we have replaced native forest with Russian timber.

**Mr JUSTIN FIELD:** That is not because the native timber is not available for that, at the moment. That is because that product is cheaper and easier to use, right? There is no barrier to us producing LVL here in Australia. It is just that no-one has made that investment yet. Would that be correct?

**DEAN ANDERSON:** At the moment, all our timber tends to go into more structural products rather than LVL. Yes, it is more competitive to do it overseas.

**The Hon. MICK VEITCH:** I want to thank Forest Corp for the way in which they have assisted the Committee in this inquiry. There have been a number of site visits, as you mentioned in your opening statement. That Blowering Nursery is a superb asset for New South Wales, so it was good to have a look at that. Recently Western Australia followed the Victorian decision to stop hardwood harvesting in that State. What has been the impact of the decisions of those two jurisdictions on the supply in New South Wales? Has there been an increased draw on our supply of hardwood, or has there been no impact at all?

**DEAN KEARNEY:** I am not aware of any specific impact arising from the Western Australian announcement. I understand that some of the Victorian supply is intermingled with supply with New South Wales customers. It is not something that we would be able to inform specifically. It is probably a question for those customers that are impacted, where they would draw timber from both New South Wales and from Victoria. I do not have the complete picture and I do not know that anyone in our organisation would.

**DEAN ANDERSON:** One of the reasons that we really cannot respond is that we operate on a sustainable level, so the ability to generate more—our customers are quite clear about what limits they have, but it is not like they can come back and ask for more.

**The Hon. MICK VEITCH:** One of the submissions—I forget which one it was now—spoke about the fact that New South Wales government contracts, for construction in particular, should be using timber grown and sourced in New South Wales. Have you advanced that argument at all to Treasury and the powers that be in New South Wales?

**DEAN ANDERSON:** Not as the Forestry Corporation. Those types of advancements come through the different timber organisations—more the industry representatives rather than from Forestry Corporation.

**The Hon. MICK VEITCH:** On our travels—I think it was up in Coffs Harbour—for the first time I was actually able to see firsthand the involvement of local Indigenous groups, First Nations people, in using the land that Forestry Corp has been bestowed the responsibility to manage. Can you advise the Committee on what steps you are taking to increase cultural and Indigenous knowledge in the management of our State forests?

**DEAN KEARNEY:** Sure. We have Indigenous involvement in every operation. Any time a harvest plan is put together on timber harvesting, there are cultural heritage surveys—there is involvement there. That is all coordinated by our Aboriginal partnerships team. We have a dedicated team of five or six people, and their job is to liaise with local Aboriginal groups and the local Aboriginal community, not just around those surveys, but also around partnership opportunities. We have seen partnership opportunities in terms of some of those tourism recreational developments like you saw in Coffs Harbour. There are also cultural learning experiences that I am aware of in the Bulahdelah area. There are partnerships with land councils around the place to look at cultural burning on country. There are a range of initiatives that we have taken and it is something we are very keen to continue to promote. We have a dedicated team to do that. My personal observation would be that there is enormous room for growth. That is a real opportunity.

**The Hon. MICK VEITCH:** Yes, I think most of the Committee would agree. I have two more questions, Chair. Hardwood sector employment—I am trying to get a handle on the numbers within Forestry Corp that are actually engaged in hardwood—both your hardwood plantation and our native forest harvesting. Is it possible to get the current figures? Can you take on notice the current figures of employment in Forestry Corp involved in hardwood?

**DEAN KEARNEY:** Yes.

**The Hon. MICK VEITCH:** That would be good. And, if it is possible, maybe the location. I want to get more of a handle on that because I do not have a handle on where they all are.

**DEAN KEARNEY:** Fair enough. I can give you a brief overview, if that is of use.

**The Hon. MICK VEITCH:** A brief overview or you can take it on notice. That would be good.

**DEAN KEARNEY:** Obviously we have staff spread right across the State. We have western districts that go almost all the way to every border. We have our coastal staff spread from Casino in the north all the way to Eden in the south. Across that footprint there are around about 250 staff who are in permanent roles. During the fire season there are a range of staff—up to 50 staff at any given time—who are available for firefighting on more of a casual basis. Some of those people do also undertake casual work year-round as well. In terms of contracting, we will have to take that on notice, but there is probably in the order of 30 to 40 harvesting crews with three to four people in each of those harvesting crews, plus other people in the back room that do support to those contractors as well.

**The Hon. MICK VEITCH:** That would be good, thanks.

**DEAN KEARNEY:** They are the direct numbers.

**The Hon. MICK VEITCH:** I have misled the Committee. I have two more questions now after that last question.

**The CHAIR:** Straight to the Privileges Committee.

**The Hon. MICK VEITCH:** Yes, off to Privileges for me. It has been raised with me, and maybe some other members of the Committee, that the local apiarists are a pretty important stakeholder that you have to work with. When we were down at Mogo looking at the proposed bike track, one of the apiarists, once they found out that we had been there, rang me to say they were pretty concerned. They had a pad that they use to put their hives on and it is, if not adjacent to, pretty close to where this proposed bike track is going to be. They would like to have been involved in greater detail in the discussions about that because they don't want people just turning up riding on the bike track to suddenly find a whole heap of beehives have been put there overnight. Is there a formal process for Forestry Corp to work with apiarists in New South Wales? That aside, how do you work with apiarists on the ground at a local level? They are pretty transient. They move their hives around, quite rightly. How does Forestry Corp engage with them there?

**DEAN KEARNEY:** We provide permits for the bee sites or the ranges, as they are called. We just provide a permit that has a geographic boundary. They can put their actual set-down sites within that boundary, as long as it is not in an area that's to be excluded because it has old-growth or rainforest or one of those other values that you can't put a set-down site in. We just provide those permits and allow them to undertake that activity in that way. In terms of the example around the mountain bike track, I'm not sure what process has happened there. It's something that I don't have oversight of and I don't think Mr Anderson would have any insight into, either, so we'd have to take that on notice. But it should, in the normal course of events, be that stakeholders like that are part of a process of consideration of design of mountain bike tracks. I can't imagine the mountain bikes would like riding close to the bees, as well.

**The Hon. MICK VEITCH:** Based on the phone call, I'm not sure whether they hadn't been engaged or whether they had been engaged, but I don't think it was to the people who are actually involved in using that set-down pad. But anyway, if you can take that on notice that would be good. The last question to wrap this up today, for me, is on the weeds and pests issue. As we have travelled around—I think one fellow at Tumut said there was 49,000 hectares of softwood plantation near him or around him, and 48,000 of those have blackberries. When we were up on the North Coast there was discussion around camphor laurel. The Hon. Taylor Martin now knows what a camphor laurel looks like.

**The Hon. TAYLOR MARTIN:** Thanks, Mick.

**The Hon. MICK VEITCH:** It is quite a serious issue. I know that you undertake activities around managing weeds and pests but my take—it may not be the take of other Committee members—on information that we have been provided as we have been travelling around and talking to people is that it is not enough; that there has got to be a much bigger effort in combating weeds and pests on Forestry Corp land. First of all, do you think that's fair? Secondly, if we were to ramp up, what would you want this Committee to be recommending to the Government?

**DEAN KEARNEY:** Do you want to go first?

**DEAN ANDERSON:** In terms of what we'd like recommended to the Government is most probably that funding of the cooperative approach where we're trying to work together with the wider community in terms of a lot of these weed species. If we take the favourite for the Tumut area, blackberry, the funding that's at a Federal level for that weed is miniscule. The idea of looking for a biological control is most probably imperative. As we discussed on site, the biggest issue is finding a herbicide so we can treat the blackberry but not kill the trees. If we could have a biological control that could just—it won't eliminate it, but reduce its virility. There were some trials in WA. There was a concern that it didn't stay with the blackberry; it did attack other areas. It's not a simple measure. We don't need another cane toad event. But to make sure we don't get a repeat of that, if we could fund it properly at the national level, that would be good.

That's similar with a lot of weeds, because it's about a total approach. As we talked about on site, we certainly upped the ante at the re-establishment to minimise it. We have been trialling a first-thinning approach, where we can take a machine through the stand and spray. And because the trees are tall, it's not getting onto the needles of the tree, so we're able to knock the blackberry back a fair bit. We've budgeted for 50,000 hectares per annum for that. We can certainly lift it but there is a coordination approach. There are some key weeds that we need to work together on. We've done things on the North Coast where we've looked at the camphor laurel in terms of the biofuel. Dean might be able to explain a bit more where we got to with that.*

* In correspondence to the committee received on 23 June 2022, Mr Dean Anderson, Regional Manager, Snowy, Forestry Corporation, clarified his evidence.

**DEAN KEARNEY:** Sure. It's only in a trial stage at this point, but we have looked at taking out mature camphor laurels at the time of harvesting and using those as biofuel—so using the logs where we can, where they can be utilised, and there are some people who are interested in buying small amounts of camphor laurel logs. We are also looking at chipping the remaining camphor laurel and using it as an opportunity to reduce camphor laurel on those sites. Going back to what Dean said, camphor laurel is a weed that is across tenures. It's quite dense in parts of the landscape.

If I were to make a recommendation to the Committee, it would be that the Committee look at those consultative mechanisms through weed councils and look at allowing them to prioritise where spending should be. Certainly there's always more you could be doing. But, in terms of establishing priorities, there's a mechanism out there for doing that already. It's through that mechanism that I recommend looking, because those weed committees have an overview of all the different tenures. There's a range of other less high-profile weeds like tropical soda apple and lantana. There's an almost endless number and there's always more we could be doing. Some of them are really nasty and need to be controlled; others are just sitting and waiting.

**The Hon. MICK VEITCH:** Do you have a seat at the table on those weeds committees? Is that correct?

**DEAN KEARNEY:** That's correct, yes.

**DEAN ANDERSON:** Yes.

**The Hon. MICK VEITCH:** At the local level?

**DEAN KEARNEY:** Yes.

**DEAN ANDERSON:** Yes.

**Mr JUSTIN FIELD:** Thanks, Dean and Dean, for being here, and for your support. I think we've all learned a lot over the trip so far and in speaking to you. I want to turn to koalas, which were a topic of discussion in Coffs as well. On Friday the NSW Threatened Species Scientific Committee up-listed the koala to now be declared an endangered species in New South Wales. How will that change your current and planned logging regime, on the North Coast in particular?

**DEAN KEARNEY:** There's not a direct implication of that change in that it does not immediately affect the Coastal IFOA. What the Coastal IFOA does is put in a range of measures for koalas. As you would be aware, it requires protection of feed trees in all the identified habitat. The other thing that the Coastal IFOA has in it is a range of adaptive mechanisms. There are formal reviews of it that are required each five years. Any additional information regarding species such as koalas—or any species, for that matter—can be assessed at that time. You'd be aware that there's lots of research happening in the space.

**Mr JUSTIN FIELD:** Sure.

**DEAN KEARNEY:** There are lots of initiatives happening in the space. As we showed you when you were in Coffs Harbour, we're actively participating on all that, we're across the most recent research and we are part of that adaptive process.

**Mr JUSTIN FIELD:** The Threatened Species Scientific Committee specifically identified logging. It looked at broader land clearing as well, including for urban development and agriculture, but it identified logging as one of the reasons. Logging in the past 20 years is one of the reasons koala populations have declined to the point that they're declared endangered. You're currently logging in Girard, Yarratt and Cherry Tree State Forests. All three of those have identified koala hubs, which is the environment department's analysis of some of the most critical koala habitat, and you've got planned and proposed logging on your portal in Wild Cattle Creek, Clouds Creek and Southgate Creek. Are you telling me that the up-listing to endangered, and the fact that you're logging in the best of the koala habitat—as identified by the Government's own agency as important for protection—doesn't change your operations, in effect?

**DEAN KEARNEY:** I haven't looked at the determination on the weekend. The reference to, I think, timber harvesting was in relation to that it could have an impact on koala populations if it changed the species dynamics and levels within the forest. That was the way it was couched. I had a look at the research for that as well. I'm not aware of any data or any research that shows that our activities and our hosting regime changed the species composition of the forests we operate in.

I am aware of research that shows that koalas are persisting within our forests. We have got good robust research to show there's ongoing occupancy before and after harvesting. In terms of that proposition around changing species, it is built within the Coastal IFOA that we have to regenerate sites of harvest. That regeneration has to be consistent with the existing forest types. I am confident that the harvesting that was pointed to or described in that research and uplifted into that listing is not necessarily consistent with what we do, that the risk to koala populations have been addressed through the development of the Coastal IFOA and that there is robust research to show that those measures are working.

**Mr JUSTIN FIELD:** If logging was neutral or positive for koalas, you wouldn't see declining koala populations in State forest areas, which this report points to. All populations in New South Wales are now declared as—

**DEAN KEARNEY:** I don't think it points to that.

**Mr JUSTIN FIELD:** On the record, what is Forestry Corporation's position? Do you consider your logging activities in core koala habitat as positive, negative or neutral in terms of koalas?

**DEAN KEARNEY:** All I can do to answer that is point to the research that's been recently published that shows that regulated timber harvesting, in the way we undertake our timber harvesting, allows for the persistence of koalas in our forest landscapes. That's the contemporary research view that I have available to me. It is very contemporary, and I understand that research quite well. I do understand what it has looked at.

**Mr JUSTIN FIELD:** I understand, and you understand it's still quite contested. We've heard other evidence to that effect. I will move on to contracts and their status. Can you update the Committee whether any of the North Coast wood supply agreements that are currently due to expire in 2023, the non-Boral or Pentarch ones, have been renewed at this stage?

**DEAN KEARNEY:** I'm not 100 per cent certain about the status of that. I understand the discussions towards those extensions are underway and there is an intent to extend those. I can't tell you exactly what point they're up to. I will have to take that on notice.

**Mr JUSTIN FIELD:** I think the original intent was they would be—the Government put a time line down of March. We are nearly at the end of May. Has there been a reason for the delay, do you know?

**DEAN KEARNEY:** I'm not close enough to it to inform you. Most of my work happens at the forest end rather than at the log-out end.

**Mr JUSTIN FIELD:** I went back and had a look over the sustainability reports for the last 10 years. Actual volumes taken out of the forest have been well below what Forestry Corporation determines as the sustainable yield from those forests every year since 2011, which I think is the most historical data available in the sustainability reports. Obviously things have changed since the fires, but can you give us a sense of why? It suggests to me that either the timber wasn't there and your sustainable yield analysis is not correct or if there is another explanation for why actual harvest has been below sustainable yield, can you give us a sense of what that is?

**DEAN ANDERSON:** Do you want me to?

**DEAN KEARNEY:** Sure. If you can give some perspective.

**DEAN ANDERSON:** My prior role was general manager of hardwood. In those early years, we had a couple of wet years, so there was underperformance there. The sustainable yield includes the full range of timber products and timber species. The demand is not uniform for all of the species. At times, we don't sell right up to the sustainable yield because there are some species people don't want or can't find a market for.

**Mr JUSTIN FIELD:** In 2014, despite the fact that for the years before you were harvesting under the sustainable yield, there was the buyback of 50,000 cubic metres.

**DEAN KEARNEY:** That's why I paused. The period including 2011 overlaps the buyback period. That's why I was pausing—

**Mr JUSTIN FIELD:** That's my point. There was no logging to that rate, but you still had to buy some back and you haven't logged at your new sustainable yield rate either. I'm just trying to understand—

**DEAN KEARNEY:** To get the numbers precise, we will probably have to take it on notice. In general terms, at that point, the level of timber that was allocated under the wood supply agreements was above the sustainable yield calculations. Those sustainable yield calculations had been reviewed over time. At that point, those commitments were above. We did that in order to bring the wood supply agreements back in line with the long-term sustainable yield. It was a 2014 process.

**Mr JUSTIN FIELD:** I'm just comparing it to what you actually took out of the forest versus the sustainable yield. So I'm not sure that that analysis quite makes sense. But if you're okay with answering—

**DEAN KEARNEY:** It's a complicated question, unfortunately. Then there's lots of different supply zones, South Coast, North Coast, different levels of—

**DEAN ANDERSON:** And the buyback was focused on species group.

**Mr JUSTIN FIELD:** We're considering the future of the timber industry. One of the views out there is that we should start to exit the native forest timber industry. I'm trying to understand what sort of volumes of timber are we talking about having to potentially buy back or find in other sources. There's questions around the accuracy of the sustainable yield assessments as it stands. I think you've even acknowledged it's going to have to be looked at once you can do the fieldwork because there's uncertainties there. Historically, you've not logged it and you've also been buying back quota. So it just seems to me that the data doesn't match. I'm just trying to get a better handle on how much it would cost to buy out those contracts, in effect. If you do renew those contracts at the current levels, given that you haven't historically even been logging at those levels, which I assumed your contracts are based on, aren't we just setting up a liability risk that we don't need to by renewing those contracts at levels that you've not historically been able to deliver at and you probably won't be able to deliver at? Why would you sign at those levels?

**DEAN KEARNEY:** The proposition around historical levels of supply against long-term wood supply—I think we'd have to ask you to provide that question specifically so we can have a look at the numbers.

**Mr JUSTIN FIELD:** Okay.

**DEAN KEARNEY:** But I guess, in principle, going forward—we plan our wood supply, as I said, over 100 years. It's a modelling process. So it requires a level of sampling, data, various models to drive what yield we could have. That's over 100 years. But the regional forest agreements lock us into, at a minimum, a five-yearly review period for all of that. They lock us into using the FRAMES process and data collection from inventory to make sure that that is a contemporary process. We're working on that constantly. So, every five years, there's an opportunity to review and to correct. So we're not talking about putting in place 100 years of harvesting based on the models today. We're talking about putting in place five years of harvesting based on a 100-year paradigm.

So I'm confident that the process is robust and that there's an opportunity to correct as new information becomes available. Continuous improvement, adaptive management is what is built into that system. So we will constantly be updating our models and constantly reviewing wood supply. There has been times in the past where wood supply and the modelling have been out of sync through various historical processes about decisions, about reserve levels against wood supply agreements. The corporation has done everything it can to bring wood supply agreements and long-term sustainable yield together, make sure that's one single picture.

**The Hon. SCOTT BARRETT:** You've got your Forest Corp employees, obviously. What outside industries and businesses do you support in those areas? Maybe, in your answer, touch on how dependent you would think they are on your operations.

**DEAN KEARNEY:** There's whole communities that are very heavily dependent on the activity we undertake—communities like Grafton, for instance, in the hardwoods, and Tumut, Tumbarumba, Oberon. There's communities for whom forestry is a key employer. So it really isn't even just us or the contractors we use or the suppliers of the machinery. It's actually the entire community that we're a key contributor to in those areas. It's quite difficult to put statistics around this. I've read bits and pieces around—what are they called?—employment multipliers. I've read ABS statistics. I don't quite know which one of those numbers would be the best to provide. But we can provide you with that kind of information. But all I can say is that, yes, some of the communities we're working in we're a key industry in.

**DEAN ANDERSON:** Just to broadly answer it, we have contractors who do the harvest, do the haul. They are separate commercial operators, private individuals. We sell to sawmills, paper mills and others. Where the criticality is—we're quite often the base and the core supply. Through that, they're then able to leverage off our estate in terms of being able to buy off other growers. If you don't have that base area or the base volume out of either the hardwood or the softwood, then you get a collapsing of cards, because there's no scale. We offer that real, major core scale that enables all those other things to leverage off. When you ask what numbers of individuals' income would actually be dependent on our continued existence, the number multiplies very quickly, because if you no longer have that scale, the whole industry just disappears out of the area. If you look at somewhere like Bombala or Tumbarumba or Tumut and Oberon—that big impacts.

**The Hon. SCOTT BARRETT:** Mr Kearney, you mentioned before in your opening statement that you are substituting wood in, and I think you said more carbon-intensive products. Can you touch on that a bit more, and I guess we are looking at it holistically?

**DEAN KEARNEY:** There is probably one really straightforward example of that and that is utility poles or power poles. Wood is the preferred product for that. It is the preferred product for a number of reasons. The alternatives would be concrete or steel. Those alternatives are, I guess, less preferred because they are more difficult to handle, they are more expensive to produce, they are more difficult to put up and service, they are not natural insulators, as is the timber. There is a whole range of reasons why a timber pole is the preferred product there. When you look at it from a carbon perspective, timber, which has been grown, sequestered carbon against either concrete or steel, it is clearly a preferred option as well. When we talk about reducing supply of products from our forest, we are talking about substitutes or alternatives, and those substitutes or alternatives are often from industries that are more carbon intensive.

**The Hon. SCOTT BARRETT:** When we talk about the difference between a State forest and a national park, and making something a national park to attract more visitors, what can someone do in a national park that they can't do in a State forest?

**DEAN KEARNEY:** I am not sure there is much you can do in a national park that you cannot do in a State forest, but it would be actually the other way around. There is a whole range of activities that are allowable on a State forest that are not allowable in a national park. That is where, obviously activities like regulated hunting, recreational four-wheel driving, it might be possible in a national park but it is certainly discouraged. There is more opportunity for those kind of activities in the forest. There is horseriding, anything that involves bringing your dog along. There is a whole range of activities you can do in a State forest that actually aren't appropriate in national parks and aren't allowed in national parks. That includes that we have free camping areas and things of that nature. It is simpler for us to allow for recreational activities, including motor rallies, motor sports and anything that I guess requires either horses or other animals like that. It is much, much easier to do those permitted activities on a State forest.

**Mr JUSTIN FIELD:** Can I have just one follow-up question on the question from the Hon. Scott Barrett? On the power poles, do you have any sense of how many sticks you sell each year to the electricity sector?

**DEAN KEARNEY:** I would have to take it on notice but it's quite a few. We are the major supplier across Australia.

**Mr JUSTIN FIELD:** Can they conceivably be a plantation hardwood?

**DEAN KEARNEY:** They could conceivably be, but the thing about a power pole, they have to have certain properties. They talk about a kilonewton rating, which is all about the species of the pole—

**Mr JUSTIN FIELD:** What species are preferred power poles?

**DEAN KEARNEY:** Sorry, there is a range of species that can be used. It is all about the density of the timber and there is class one and class two. It depends on the diameter of it as well as to whether it can be used.

**Mr JUSTIN FIELD:** What is the ideal?

**DEAN KEARNEY:** Their ideal is a 12.5, 4 kilonewton pole, so 12.5 metres long and—

**Mr JUSTIN FIELD:** Tallowwood.

**DEAN ANDERSON:** Tallowwood, ironbark, blackbutt and other stuff.

**DEAN KEARNEY:** So, there is a range of species that are durability class one, which includes tallowwood, ironbark and various other things like Gympie messmate and some of the mahoganies. Blackbutt and spotted gum are also very suitable, but they have to be of certain diameters, very straight too.

**The Hon. PETER PRIMROSE:** Can I ask just a quick question and maybe, given the time, for you to take on notice? We have got evidence expressing concern, given the supply chain issues at the moment, that there is a need to introduce an even more rigorous system to ensure that substandard and nonconforming timber doesn't enter the supply chain. Not only are we talking about internationally sourced products but also domestically sourced. Could you take on notice what role you may play in that and what you think that system should look like?

**DEAN ANDERSON:** We will take that on notice, thank you.

**The CHAIR:** Mr Poulos, do you have any questions? You are sitting there patiently.

**The Hon. PETER POULOS:** No, thank you, Chair.

**Mr JUSTIN FIELD:** I have one more question, Chair. They might take it on notice, which is fine. I was trying to break down where the money goes. We asked the question when we visited the PNF site. We pointed out a tree and said, "How much is that tree worth and who gets what out of it?" Are you able to give us a sense of—two cubic metres of blackbutt from the North Coast forest—how much do you pay your contractor, how much is the haulage, how much does the mill pay for it, and how much do they get for the timber that comes out of it? Just give us a sense of what are the economics. We have not quite been able to understand that yet, I don't think.

**DEAN KEARNEY:** Yes, okay.

**Mr JUSTIN FIELD:** It might be difficult.

**DEAN KEARNEY:** I will have to take it on notice. It is difficult because there is a range of dynamic factors around that, including—

**Mr JUSTIN FIELD:** Just even generalities.

**DEAN KEARNEY:** We can look at averages and things to provide some overview, but I would have to go away and do that mathematics.

**The Hon. MICK VEITCH:** We have not nailed that.

**Mr JUSTIN FIELD:** No, we haven't.

**The CHAIR:** That pretty much takes us to 10:45, unless there is something you think we have missed or you would like us to focus on in our final deliberations. I will give you that opportunity.

**DEAN KEARNEY:** I am very happy to have had the opportunity to talk and hopefully we have made sense. I appreciate the time.

**DEAN ANDERSON:** I think the main thing is that we are still open. So if there are any questions that arise as you do your deliberations, please do not hesitate to ask.

**The CHAIR:** Once again, thank you on behalf of the Committee for all the effort you have put in showing us around throughout the whole inquiry. I do not think we could have got to where we are without your assistance.

**(The witnesses withdrew.)**

**(Short adjournment.)**

**Mr SIMON CROFT**, Executive Director, Building Policy, Housing Industry Association, before the Committee via videoconference, sworn and examined

**Mr JOSHUA BURG**, Assistant Director, Building, Housing Industry Association, before the Committee via videoconference, affirmed and examined

**Mr NICHOLAS WARD**, Senior Economist, Housing Industry Association, before the Committee via videoconference, affirmed and examined

**The CHAIR:** Welcome back to the next session of today's inquiry into the long-term sustainability and future of the timber and forest products industry. Would any of the three of you like to make a short opening statement before we go to questions?

**SIMON CROFT:** Yes, I will make an opening statement. Thank you for the opportunity to speak to you today. The Housing Industry Association is Australia's only national industry association representing the interests of the residential building industry. Our members are involved in delivering more than 170,000 new homes each year through the construction of new housing estates, detached homes, low and medium density housing, apartment buildings and completing renovations on Australia's nine million existing homes. The residential building industry also has a wide reach into manufacturing, supply and retail sectors. As the voice of the residential building industry, HIA represents a membership of over 60,000 building businesses in Australia, with over 20,000 members in New South Wales. HIA exists to service the businesses it represents.

HIA's comments in regards to the inquiry focus on key areas for our membership and the residential building industry more broadly. They are: security of the timber supply chain to meet short-, medium- and long-term demand for future home building; keeping the supply of timber for home building at a competitive price and not subject to significant market fluctuations; making sure that there is appropriate rigour in the timber supply chain for timber used in construction to ensure that it does not enable substandard or nonconforming products from making it onto building sites; that governments continue to support Australia's forestry manufacturing and supply sector; and that governments support research and development, and remove any unnecessary barriers for further uptake of new and innovative products and materials, including in respect to modular- and systems-based construction for multi-residential buildings.

While these issues are not specific to the terms of reference of the inquiry, they are integrally linked to the purpose and nature of the inquiry, taking regard of the current and future construction demand for timber and the ability of the plantation sector to meet this demand and any constraints in the supply chain. Of primary importance for the residential industry is the security of the timber supply chain to meet future home building demand. Whilst long-term housing forecasts are difficult, given the current environment based on population growth projections and ongoing replacement of aged housing stock, it is conservatively estimated that there is demand for construction of around 170,000 new dwellings per year on average in Australia.

It is estimated that between 95,000 and 115,000 of that 170,000 is on detached dwellings, and that in construction, around 75 per cent of these are expected to use timber framing for the walls and the floors and the structural elements. While there has been growth in the use of alternative framing materials and building systems, these still represent a very small proportion of the market. The housing industry, therefore, needs to have confidence that this demand of timber framing for houses can be met.

Over the past two years, the supply chain and the residential building industry more broadly has a number of challenges, stemming in part from the 2019-20 Black Summer bushfires; the substantial increases in building activity of new homes and renovations both in Australia and internationally; challenges resulting from the COVID-19 pandemic; global shipping issues; and the Russia-Ukraine conflict. The inquiry, therefore, provides a timely opportunity to consider potential medium- and long-term measures that the State and Federal governments could look to implement to support the forestry industry to meet the future homebuilding demand and the timber supply more broadly. Thank you for your time and we are happy to take any questions.

**The CHAIR:** Thank you, Mr Croft. That sounded like a pre-prepared statement. Are you happy to email it to the Committee secretariat so it can be passed on to Hansard?

**SIMON CROFT:** Yes, no problem.

**The CHAIR:** This is the Committee's last hearing. Is there anything that has come up in other submissions or other hearings that you would like to comment on or correct or raise from any evidence that you have heard from other hearings?

**SIMON CROFT:** No, there is nothing that we've seen that we would—out of respect, no.

**The CHAIR:** Okay. I will just go to one issue. It is sort of left of centre of the terms of reference, but it goes to the rising cost of timber and that impact on your members and builders in general. We know that a lot of residential buildings are now done on a fixed-term tender or fixed-price tender, but when you set a price 12 months down the line and then you are not building until another eight months down the line, there are some significant price fluctuations. I have heard anecdotally that is putting pressure on local building and small building companies. Can you provide a bit of clarity as to the extent that is impacting our smaller to medium builders?

**SIMON CROFT:** Yes. Probably the simplest way to respond to that one is that there are a number of contracts that were entered into around 2020 that, as you said, have had fixed-price contracts. The price increases, and I think we saw some quotes for timber recently around the 21 per cent price increase. Those contracts were entered into prior to any of these price increases. A lot of builders are really struggling with some of those matters and they are either running at a very minimal profit on some of the contracts that they have entered into or just break even and on some potentially even at a loss. It is very challenging in terms of those price increases, but the industry is working through them. It is a cycle that many of them have lived through over many times in terms of their business lives. There are some contracts that they have entered into prior to around 2020 and the price increases and those issues that I mentioned, and that is placing some pressures on them. But they are working through them to finish those homes off and enter into that other demand going forward, factoring in the price increases into future contracts.

**The CHAIR:** To follow up, are we seeing some of these small to medium builders fall over because of that loss that they are making, that will not be able to recoup and they are going to have to shut down? Is that what we are seeing?

**SIMON CROFT:** I think they are working through the challenges, Chair, and looking to finish those contracts off. As I said, they have gone through and they've got their framing now. They're probably into those final stages of the project, and there are some price increases in some of the electrical and some of the finishing elements. But they are endeavouring to finish these projects off so then to enter into new projects going forward, factoring in those additional price increases.

**The Hon. MICK VEITCH:** Mr Croft might be the person for this question to go to. Your submission was received by the Committee in May 2021. A fair bit has happened since May 2021. I wonder if you could take this on notice. When questioning other witnesses, we have drawn upon the "current state of the market" section of your submission. The information contained in there probably needs updating. Is it possible for you to take on notice that section of your submission—the current state of the market—where you look at supply constraints and the like, and global demand, and provide a number of updated statistics for the Committee?

**SIMON CROFT:** I'm sure we would be able to do something like that, Deputy Chair. So the current state of the market is the specific part that you'd be after?

**The Hon. MICK VEITCH:** Yes, if you could just do that, that would be really handy for the Committee. In your submission, you speak at length about "appropriate rigour in the timber supply chain for timber used in construction to ensure that it does not enable substandard or nonconforming products" to make their way onto our Australian building sites. In your submission, you talk about what that is. But can you maybe just elaborate a bit more, using current information, on what your concerns are, particularly around the lack of new plantings or plantations?

**SIMON CROFT:** Yes, this point, in terms of that supply chain, goes to building products and conformity more broadly. That was the subject of a Federal Senate inquiry as well all the way back in 2015. A number of the issues that many of us raised at that time are still really relevant to today—about trying to ensure that the products that we get on building sites, by the time that they get there, meet the relevant codes and standards that they purport to.

Then there is the protection for the builders themselves to ensure that if they're using that product, if it was to fail—saying that it meets the standard but actually it turns out that it doesn't—then there are protections there and recourse for them to be able to follow up, rather than the system sort of being a bit back-ended. At the moment it is the people at the end of the supply chain, in terms of the rules and the regulations, as opposed to being spread sort of broadly across the supply chain and those people that play a big part in that having that accountability. So some sort of shared accountability is sort of where that goes to and ensuring that our conformity levels and our building codes and standards are as rigorous as they can be to give that confidence to builders, the building certifiers and the people who are using those products.

It is also about the product information being really clear. Sometimes there can be very broad statements on some of the product information. So "meets bushfire requirements"—what level of bushfire? Is it the BAL 12.5 versus BAL FZ? They are very different in terms of what their performance levels need to be. But sometimes that product information can be very difficult to obtain and not all that clear about what aspects of the building codes and standards the product purports to meet. I hope that helps. There are some improvements that can be made around there. I know New South Wales has been progressing reforms through the Building Commissioner and through other work undertaken. But there is probably more that can be done in that space about that shared accountability across the supply chain and around our codes and standards, and having that really clear information on products' conformity.

**The Hon. MICK VEITCH:** My last question relates to the—in my view—pretty strong comment that you make in your submission about supporting research and development. In particular, you talk about the new innovations in construction systems and materials. Obviously, they rely on investment in research. If you were in our seat and you wanted to make a recommendation to the State Government about research and development, what would that look like? What's your wish?

**SIMON CROFT:** What is my wish? Probably that this goes a little bit better. There was also a House of Representatives Federal inquiry—the Aussie logs for Aussie jobs inquiry—as well. They recently published a report, and one of the nine recommendations in that report also went to this issue of the Government investing in further research and development to enable new products and new systems to come into the market. And also, particularly in that multi-residential space, it is still a fairly small use of timber in that multi-residential space, and we are seeing a lot more work being undertaken on systems-based and modular systems of construction. HIA has undertaken some work on behalf of the Federal Government in that regard as well. We do see that that is going to have a lot more uptake in years to come, as well, utilising timber framing as part of those systems—using that and common systems of construction.

I think investing in that research and development is ongoing, and probably something in Australia that we probably don't do enough of is that R&D, research and development, and investing in that future. To put a number on it is a difficult one, isn't it, on these things? Is it $2 million to do a project? Is it $10 million? It is very hard to put a number on it. But looking at grant programs and things like this, where people can put submissions towards future opportunities around it, is probably something that governments could look at in that sort of grant applications type of approach and the R&D area.

**The Hon. MICK VEITCH:** Do regulations and codes put impediments in front of the use of new, innovative materials?

**SIMON CROFT:** It can, yes. Because they are traditionally written for building it stick by stick, traditional construction, where our building codes and standards are performance based, so do allow for innovative systems. But the innovative systems are then subject to approval on a case-by-case situation. So people will look for that more prescription, so they can bring new products and systems to market and have the confidence that it will be approved at the end of the supply chain for use in construction. The codes and standards are slow to innovate, and it sort of requires many years of people using the systems before they then get adopted into the codes and standards. It does then also go to the other question on the research. Usually the changes to the codes and standards come from industry, and also that R&D and research. That is where, probably, there is some scope to get ahead of the game, rather than being reactive in some of the approaches to enable new systems and forms of construction into the market.

**The Hon. PETER PRIMROSE:** I would like to follow up on a point that was raised by Mr Veitch, and that is the issue of the possibility of substandard and nonconforming timber going into the building supply system. Could you please take on notice what, if any, recommendations you believe this Committee should make to the New South Wales Government if we wish to have a more rigorous system in place to ensure that that does not happen? You spoke to it in response to Mr Veitch's question. You said that there may be more that can be done. If you could just take on notice, please, what else you believe may be something that could be done to ensure that this does not get more into the building supply chain.

**SIMON CROFT:** I am just jotting it down, what I am taking on notice today. Just give me a second.

**The Hon. PETER PRIMROSE:** I am sure that the Committee secretariat will be in touch as well.

**The Hon. SCOTT BARRETT:** I have got questions about the same type of incident. Maybe, chronologically, I should have jumped in before those ones. The 75 per cent of timber that we are using—we touched on the research and the possibility of doing something different. But why are we at 75 per cent still? Is it price? Is it availability? And what are the trends on those different materials?

**SIMON CROFT:** I will talk a little bit to it, and then I might throw to my colleague, Nicholas Ward, who did do a research program about two or three years ago, where those figures come from. Those two things that you just mentioned there, in terms of price, there is also—readily available, generally, has been, historically. Workability of timber—I am a carpenter by trade myself, many moons ago. Timber, you can manufacture on site, you can do your check-outs and things like this. We are using steel and using more of a fabricated system where you can tailor it to suit the site itself. It is workable and has, as you said, traditionally been available at a competitive price and readily available. So all of the above—you know, shipping, moving timber.

It comes in standard sizes that suit what we build as well, be it stud sizes that then shoots 2.4 metres per stud. That is also then reflective of what our plasterboard sheets are and things like that. Later on, in terms of fixing your plasterboard, fixing your skirtings and your architraves, it has our standard tools and nails and screws all set up around it. As I said, there has been some movement in that, particularly in the last 18 to 24 months, where supply has been more difficult. But we have seen for steel—in the report I think we mentioned 14 per cent or 15 per cent. I think some figures show that it is probably around 20 per cent at the moment. There are some other places like Western Australia that still use a lot of cavity masonry double brick. There are a range of factors around it all but, yes, it is a traditional material that has been used for many years and it is readily available at a good price. It is good, workable and transportable. I do not know if Nick wants to add anything else to those comments.

**NICHOLAS WARD:** I think the question is a very good question. It goes to how builders handle and adapt to the changing situations. We probably need to let the dust settle on the current conditions to see what the net result is. I would probably add one piece of data that is relevant. Simon referred to general timber costs going up by about 20 per cent in the ABS data. Within that, structural timber has gone up by about 40 per cent, but steel products have also gone up by about 40 per cent. I suppose the impetus to switch is less compelling when you realise that everything has gone up. The figure that you referred to—75 per cent—is from a couple of years ago. I think when we get to the end of the current period, then we will have a clearer idea about exactly how the substitution plays out.

**Mr JUSTIN FIELD:** Can I ask a follow-up to that?

**The Hon. SCOTT BARRETT:** Sure.

**Mr JUSTIN FIELD:** Obviously we would have preferred more pine trees to have been planted 30 years ago so that they could be harvested now, but fires have impacted and we did not do that. So what do we do now? Say we have $200 million to spend, should we buy more land and plant more pine or should we put it into R&D? Because by the time those pine trees are mature, there will be a new technology with a different material that will be a preferred building product anyway. Can you give us a sense of what we should do with government resources to guarantee the building industry has what it needs in the future and so that we are not trying to basically recreate old ways of doing things that are not going to actually be the way it is done in 30 years' time when those trees are fully mature?

**SIMON CROFT:** I can try and answer this one, which seems like a broader question. I would probably refer to the House of Representatives inquiry, Aussie logs for Aussie jobs, which brought forward nine recommendations. They went to each of the different issues and I think it interlinked and all of them worked together. I think that having regard for some of those recommendations may be worthwhile for this inquiry as well. It went to a concessional loan scheme for the establishment of new timber plantations, the carbon abatement work as well, projects, research and development as well as the development of a code of conduct and other things. But in terms of, "Are we going to move away and build things differently?", what we see is that we have built timber framing for a long time. We have adapted and we now use lots more prefabricated wall systems and roof systems. We are still utilising the same types of timber. As we might move to more systems-based construction, it will still be utilising our specific types of materials and techniques but tweaked to maybe doing it a bit more off site than doing as much on site. These things go hand in hand with each other. Even with types of different engineered timbers and floor trusses, they are still using the majority of the same types of timber but used in different ways. I think they go hand in hand with each other.

**The Hon. SCOTT BARRETT:** Back to another point that Mr Veitch raised about the sub-quality standard, you touched on it in your report being particularly an issue for internationally sourced product. To what extent are you worried that, as we are short of timber, an increase in imports in timber will lead to an increase of substandard timber in the supply chain?

**SIMON CROFT:** I think along that point, our point was more of a general point about materials broadly, about ensuring that our supply chain and our building and regulatory system is robust. That was sort of the point we were making. In terms of where we might have seen substandard timber, it is probably much lower than some of the other types of material. Sometimes you might see reports around glass and some steel. We don't generally see as much with timber, as a more natural product. Some of the engineered timbers, there have been some issues in the past with the glues and things like this used in some of the formwork ply and things like this. The point was more a broader, general point about ensuring that we have a robust system in place.

We have a very good system in Australia at the moment, so we have very small instances of nonconforming product. But we want to ensure that we do have that system—there are some improvements that could be made to it, and that is probably where our point was going to. But I wouldn't want it to be that we're seeing a lot of nonconforming timber happening on sites; that is not the case. Instances of nonconforming products are small but they have generally been in other areas more so than necessarily timber.

**The Hon. SCOTT BARRETT:** I will ask another question about the use of timber in the structure. Ultimately, whose decision is that? Is it the builder or is it the homeowner?

**SIMON CROFT:** It would generally be the builder and the design. Depending on the house size, the house complexity and the type, it may need to have an engineer's design going into it, which is in many buildings now with the large open-plan footprints. It might be then a combination of steel and timber used to break up the different structural elements to get the spans that you can buy and are available. It is generally going to come down to, then, if the homeowner asked, "I want to have my house in steel framing," then the builder would build it as a steel framing. But generally that's just done in the plans and the specifications, and there are engineering and framing schedules that go into it. Most homes would have that. That would then determine some of the sizing, span tables and our Australian standards and things like this, for the types of timber, the grading and what sort of size members that you can use.

**The Hon. SCOTT BARRETT:** There does not seem to be a big push away from using timber products from consumers.

**SIMON CROFT:** No, there is—as I said, steel was, in our report, probably around that 14½ per cent and has now moved to around about that 20 per cent. But if a homeowner requested bricks, if they requested rammed earth or if they requested a structural insulated panel system, the builder can build out of any of those things provided that it still meets the building codes and has all the different spans and things like that that it needs to meet.

**The CHAIR:** We have got about three minutes, so I will throw to Mr Field.

**Mr JUSTIN FIELD:** Thank you, Chair. I just had a question about hardwood use in the residential construction sector. How much is structural pine, LVL and those sorts of materials replacing the use of native hardwood timbers?

**SIMON CROFT:** Probably it would be more anecdotal, my response to that one, sorry. I grew up in Melbourne building houses. We did use a fair bit of hardwood F17 for our structural applications, for our lintels and our floor joists and things like this. Building up in Canberra, very rarely do you see hardwood used. They generally are using LVLs now and, similarly in New South Wales, engineered timbers and the different types of engineered timbers, of which there are quite a few different types, and softwood beams as well. So I think it probably would differ a little bit across the country. Certainly I think there's less and less hardwood used and more of some solid pine softwoods, but a lot of engineered timbers being utilised for the structural applications. It went to the earlier point about the different types of spans and openings for dwellings as well. The engineered timbers can do a lot in that respect, and the availability of longer lengths and longer spans.

**Mr JUSTIN FIELD:** So a transition—and we are seeing this in WA and Victoria and, possibly at some stage, in New South Wales—away from native forest logging would not necessarily have an impact on housing construction?

**SIMON CROFT:** I probably would have to leave that for others who have got more of a hardwood perspective around that. We have timber codes and standards and framing. That gives us different solutions to different types of members—if it is softwood or hardwood, if it is engineered timbers. I would probably talk to that and let others who more understand the complexities of the hardwood-softwood conversation to respond to that one.

**Mr JUSTIN FIELD:** Say you do have a big span, you want to put in a big presentation window—three metres—and you could put up a hardwood beam or an LVL or engineered pine product to support the roof. Which is cheaper?

**SIMON CROFT:** I think that would be based a little bit on where you might be in the country. If I tried to buy a hardwood one around the Queanbeyan area, I think you get a better price for a solid or an LVL than you would for a hardwood. But maybe in other parts of the country, where it is more readily available, the price might be fairly comparable.

**The CHAIR:** That takes us to time. Thank you, gentlemen, for giving us some insight from your part of the world. I think you have taken a few questions on notice. The Committee secretariat will be in touch about what those are, and you will have 21 days to get back to us. Once again, thank you for coming in and for giving your evidence.

**(The witnesses withdrew.)**

**Mr JIM SNELSON,** Chief Executive Officer, Borg Manufacturing, affirmed and examined

**Mr WARWICK DRYSDALE**, Member and Sponsor, Frame & Truss Manufacturers Association of Australia, and Director, Programmed Timber Supplies, sworn and examined

**The CHAIR:** Welcome back to our next session.

**WARWICK DRYSDALE:** I indicate that Programmed Timber Supplies is a timber processing and fibre utilisation plant based in western Sydney.

**The CHAIR:** Would either of you like to make a short opening statement?

**JIM SNELSON:** Yes. I've got one, Chair, if that's okay. It is good to see you again, and thanks for the opportunity to speak today. This is a very high level overview from our perspective. I am certainly very proud of the lifetime career that I've had in this dynamic and vital sector. It's a sector that employs 80,000 people directly and many hundreds of thousands of people indirectly, and contributes about $84 billion to the national economy. Forest products are at the heart of every Australian home—from the frame to the flooring, to the verandah to the veneering, and from joinery to joists. It's a significant sector which, in my mind, has struggled to receive the credit it deserves. In many ways it is underrated, a quiet achiever and taken for granted, if you like.

The forest products sector delivers many short- and long-term environmental and socioeconomic benefits. It's sustainable and is aligned to the principles of the circular economy. It's renewable and it's recyclable, as evidenced by Borg Manufacturing's newly initiated reDirect Recycling program. It's a carbon sink in the climate change discussion. It's regionally based, creating thousands of regional employment opportunities. In fact, it is labour hungry. It is an issue that we are constantly dealing with—trying to get more people to work in our business. In saying that, it's much more than the blue-collar worker that people think of as our industry because it provides the full spectrum of careers, from finance right through to forestry. As I mentioned before, it makes a significant contribution to the national GDP.

A successful forest products sector needs vision. It needs a 30-, 60-, 90- and 100-year-plus vision. It needs a commitment to the long-term, not only because of the harvest cycles of Pinus radiata but also to support the private sector investment in a world-class wood fibre processing sector. Government policy in this space needs to be bipartisan and it needs to transcend government terms. A bigger Australia, with a population of 30, 35 or 40 million people or more, needs a bigger, stronger and self-sufficient forest products sector to supply the products needed to support that growth. Furthermore, the industry needs to have the confidence to invest in low return, high capital cost processing technology—world-class technology, in fact—that enables highly efficient production to meet not only Australia's growing consumption needs but also establish a viable and competitive wood products export industry. It's something that we often don't talk about too much.

In this country, and in New South Wales, we have the space, the resources, the climate and the capability to build a globally competitive forest products industry sector. The New South Wales Government and governments from around Australia need to get behind this opportunity. In doing so, we need to address some of the future challenges of the sector—the likes of climate change and the impact that may have on fire, skills development and training and energy costs. You would have noted, during your visit to Oberon, the 10-megawatt installation of solar power on the Borg Manufacturing facility at Oberon. We need to address biosecurity and, overall, we need to ensure that the government regulation, as it relates to health and safety for freight and logistics, provides the opportunity for the sector to prosper going forward. Overall, we need a bigger, stronger and more efficient forest products sector to support a growing Australian economy and population. In very short terms, we need more trees planted and more investment in the processing sector.

**The CHAIR:** Thank you. Mr Drysdale, did you have a—

**WARWICK DRYSDALE:** Yes. I have an opening statement, which has been pre-prepared. The FTMA is a national association that supports timber prefabricated roof truss and wall frame fabricators. It is these fabricators that provide the skeletal structure of by far the greatest majority of detached domestic dwellings and a growing percentage of low- and mid-rise shelter for Australians. In short, it is the frame and truss industry that is an early part of the significant downstream forest and wood products value chain. If the frames and trusses are not produced, the ramification is that the basic need for shelter is not able to be achieved to house Australians. I apologise for coming to this negative, but it is what it is. Furthermore, the continuation of the value chain would not progress, and that would have a massive impact on the economy.

As the plantation estate has not expanded, any future growth would need to come from either imports or through better utilisation of domestic resources. To meet current demand, Australia imports over 20 per cent of the timber required. With a progressive reduction in product available from our own native forest resource, some additional reliance has been placed on import dependency. By far the greatest percentage of timber used in frames and trusses is presently, but not necessarily, from a softwood resource. The frame and truss industry is very appreciative of import supplementation because, without it, it would not be able to meet the demand for shelter for our citizens.

However, there is a risk in relying on imports entirely to meet an increasing demand for shelter. Global demand for timber and forest products is increasing because the rest of the world understands the critical and unique contribution the ultimate renewable contributes in CO2 sequestration. There is a growing timber and forest product per capita globally. Ability to reach net zero by 2050 is a significant driver of this. There is, conceivably, if not actually, pressure on exporting countries to retain more of their wood domestically so they can reach their own targets. Geopolitical events like those playing out in Ukraine at the moment exacerbate the supply-demand equation, and that's not to the benefit of securing our requirement for increased dependency. The current supplementation by imports to meet our domestic needs come overwhelmingly from managed native forests, not plantations as we know them. We are not supplementing the shortfall from our plantations from like offshore plantations.

It is the strong offshore native forest management that is supporting our deficit. Forest area per capita in the greater majority of countries that we import from is dramatically less than Australia's. Conclusions on that base can easily be drawn on the relative approach to forestry in this country. The demand for shelter is increasing. Housing Industry Association and Master Builders analysis proves the obvious. Already we rely on strong support from importers to meet that need. We are indebted for their support. We must do everything to ensure we are meeting our own needs as much as possible. Clearly, we need more trees on the ground. One billion would be just a start. In the meantime, all sustainable opportunities to increase domestic supply must be taken.

Fortunately, there are opportunities without environmental cost. Utilising our plantation resource is the first area of concentration. Softwood grown in the regions that don't have processing capacity must be transported to processing centres and not driven to the port. Some redirection is occurring now to support softwood sawmill supply, following the 2019-20 fires, but there is potential for more. The increasing value of the resource is changing some of the fundamental economics around what is a sawlog and what is a pulp log. The difficulties in processing lower quality logs is being overtaken by increasing fibre value and improving technical ability to handle these logs. Extraction of more building-suitable products from the current processed log is possible through technological improvement. In our country, Programmed Timber Supplies is a classic example of that opportunity. Structural design software has further scope to also allow better fibre utilisation. Hardwood plantation that was planted for pulp production has the potential to be converted in some degree into building products.

All of those initiatives are of considerable interest to an industry that prepares the ground for massive value-adding downstream, which provides the shelter needs of the country and into the future. We appreciate and are dependent on contributions from offshore native forests, but improving our own sovereign control facilitates the economic and social governance obligations that are critical. Those opportunities will require investments—private, government and combined—but by providing the skeletons for our entire downstream value chain, the returns are beyond significant and provide shelter for our children and theirs. Thank you.

**The CHAIR:** Thank you, Mr Drysdale. Are you happy to pass that on to the Committee secretariat?

**WARWICK DRYSDALE:** Certainly.

**The CHAIR:** Firstly, on behalf of the Committee, I'd like to thank you, Jim, for taking us into Borg Manufacturing and showing us the—

**The Hon. MICK VEITCH:** Fantastic.

**The CHAIR:** —fantastic facility you've got there. It might be hard to condense an hour or so of a tour into a three-minute explanation, but I think some of the great work and innovation that you're doing there needs to be put on the official record. So perhaps if you could talk to us about the redirect/recycling element—I think that was probably a key part of it—and also the power thing, the solar panels and all that.

**The Hon. MICK VEITCH:** As much as you can without—

**The CHAIR:** As much as you can.

**JIM SNELSON:** Yes. I think we went well overdue on the visit, so four hours into three minutes, I'll do my best. In short, we are a fibre processing facility and we produce medium-density fibreboard and particle board. It was a facility that was established in the 1980s and 1990s and acquired by Borg Manufacturing, John and Michael Borg, two Australian brothers, in 2010. Since that time, they have invested hundreds of millions of dollars in that facility to make that facility a world-class—and I mean world-class—leading-edge technology facility. We have state-of-the-art equipment to make particle board and MDF. We are producing in that facility alone about 40 per cent of Australia's particle board needs. With our older facilities in Mount Gambier we are producing 60 per cent of Australia's raw particle board needs from those two facilities. We are producing about 40 per cent of Australia's raw MDF out of that facility at Oberon as well.

The facility now employs—we have about 330 people at Oberon alone. We employ 1,660 people in New South Wales and the investments that you saw at Oberon, we have made similar investments in our downstream value-add processing. We take that raw MDF and raw particle board and continue to value-add that product right through to cut and routed kitchen doors that go into every household around the country. We make wardrobes, we make wardrobe components, we make benchtops, we make decorative panels, a lot of the product that is around us in this room in fact, from raw product right back to the forest. We own some land and we own some forests and we also buy from Forest Corporation. We make particle board and MDF in the facility, we value-add it in other facilities we have at Somersby and Charmhaven and that goes then to the marketplace.

In more recent times we have established a business called reDirect Recycling where our commitment to the circular economy is best exemplified by this reDirect Recycling business where we have a series of bins that we place out in the marketplace, both with frame and truss manufacturers but also with our customers. We take the fibre offcuts from frame and truss companies and from particle board offcuts from our customers and, rather than that product going to landfill, we collect that product and we bring that back to Oberon. We reprocess that product, decontaminate it of any contaminates in there, break it down again, flake it and then make particle board out of it again. Whilst we are processing about 700,000 tonnes of wood fibre into the Oberon facility, we are currently only collecting about 70,000 tonnes of product from New South Wales that is going back into that facility. Having said that, it is very early stages of that program, and the members of the Committee saw that program when they visited Oberon. Our intention is to expand that facility and at least double that quantity of fibre that we are bringing in to produce new product from.

The last thing around our commitment to modern, globally competitive manufacturing is not only that commitment to circular economy but also at the facility at Oberon we have installed Australia's largest rooftop installation of solar panels. It is a 10-megawatt facility on the roof of the Oberon plant. We have quite a complex water recycling program as well to ensure that we are collecting water from the site and the fibre that we bring in, cleaning it and reusing it in the facility.

**The CHAIR:** I might just ask a couple of questions before I throw to others. Both of you have spoken about this gap between what we produce domestically and what we need to import. You have both indicated that we need to perhaps close that gap a little bit. Mr Drysdale, you spoke about other countries being a little bit more protectionist about their own domestic supply. Do you think we need to take those steps of being a little bit more protectionist, in terms of holding back some of our exports?

**WARWICK DRYSDALE:** Australia is in a very different situation, obviously, because we are importing from exporters but we are the recipient of the imports. In our sector we are not exporting product that we would be involved in, in the frame and truss sector, of course. When we look at some of the residues that may get exported, or chip and things like that, there are potential areas where some of that product could be processed into other products to meet our needs domestically. That would therefore take demand off some of the imports. As I said in my opening presentation, other countries are coming under pressure. Populations are increasing. Forest areas are not increasing so much generally across the world, but certainly in the countries we are receiving product from, their ratio is actually currently increasing population to forest area. There is a bit of a situation there. We have a bit of supply coming through but if you look at what we are short and where the projections are going, Master Builders are talking about 250,000 house frames short by 2035. We are seriously going to have to look to other options rather than just imports.

**The CHAIR:** We have all heard this and we have spoken about it, planting plantations now is not necessarily going to address the problem that we are facing. What can we do at a micro level now that will not completely solve the problem we face in 2050 but alleviate it?

**JIM SNELSON:** I haven't got the numbers right in front of me; Warwick may have them. There are still thousands of tonnes of logs being exported out of this country. Some of them are pulp logs, some of them are saw logs. There are probably less saw logs now. But nothing frustrates me more than seeing logs leave this country, be processed into finished products and sold back into this country when I see clearly there is an opportunity to process that fibre domestically by Australian workers in Australian companies to support the Australian industry. I am talking about the panels industry in particular where we consume pulp log.

**Mr JUSTIN FIELD:** Can I just follow up on that. Mr Drysdale may follow up too. I had a look after we spoke to you. I think it is 20,000 tonnes every six to eight weeks or maybe 250,000 tonnes of softwood pulp log going out of Eden. That was post fires and that was announced by Forestry Corporation. They said that it does not meet the domestic sawmill specs—obviously pulp logs—and is surplus to needs for pulp mill requirements. Is the issue there the transport costs?

**JIM SNELSON:** Yes, that may be to pulp mill but not to further wood processing.

**Mr JUSTIN FIELD:** You'd want that, right?

**JIM SNELSON:** Yes.

**Mr JUSTIN FIELD:** It would make sense for you to send the trucks down to pick it up and take it to your—

**JIM SNELSON:** Part of the challenge is the cost of freight. Getting product, the logs, from Eden or Bombala to Oberon is an expensive exercise. Therein lies a challenge, but you can overcome those challenges, right. That is a challenge that we have just got to face. The reality is that we are short of fibre in New South Wales. If we take the position that we have taken, which is to continue to invest in that Oberon facility—I know it is outside the scope of this inquiry—and into the South Australian facility as well, then our intention is to invest in South Australia and invest in New South Wales and build more processing facilities in this country to support the things that Warwick and I are talking about—a bigger Australia. At the end of the day, even in the short term, turning some of those logs around—you saw the new MDF line that we are installing at Oberon. Only yesterday I was sitting in a meeting at the office and we were talking about the constraints that we had with fibre supply to support the investment in that new MDF line that we are installing.

**Mr JUSTIN FIELD:** Sorry, Mr Drysdale, you interjected before, but if you wanted to go.

**JIM SNELSON:** I beg your pardon.

**WARWICK DRYSDALE:** That is okay. When we are looking at what is happening with the export of logs, it is a changing environment because obviously technology is improving the whole time. Our ability to handle small logs and more difficult logs is improving on a technical basis but also on the actual cost, the economics, where it was not worth taking that log to a sawmill in the past, maybe it is. I think it is an integrated approach that we look at it because there has been a demand for structural timber products going back for a long time, but it has fallen to a fairly sort of narrow area of need. If we move forward—we do this particularly in our own business. We will now look at and chase value in products that would not necessarily have made a building component in the past. There are plenty of wood fibre characteristics that can be utilised that currently are not being utilised, and a lot of that is because the technology has not been available in the past.

As we move a bit forward, we will see better recoveries. We will see better yields and better grade recoveries from that resource, and that therefore means that you can start to use maybe a log that may not have gone to the sawmill in the past. But it depends where the price goes. If you look at relative values of timber products, and there has been—it was mentioned earlier—a 40 per cent increase and that is about right. Product that we look at in our business—not with my frame and truss manufacturer's cap on but my personal business—is that the cost of that lower grade fibre that we take is increasing faster than higher grade product. It is like the "there is no more cheap cuts of meat" type thing. Everything is starting to get utilised better and better, and that is only a good thing. We just need to keep on that track and pursue it further. There are still further opportunities that we can expect more value and volume out of the current resources that we have here.

**Mr JUSTIN FIELD:** What immediately occurs to me is that perhaps that is a long-term contract down at Eden, an export contract. Would you be supportive of us recommending that Forestry Corporation review any of their export contracts and if there is a beneficial domestic need when looking at redirecting that resource?

**WARWICK DRYSDALE:** I think the straight economics are going to take over that anyhow. If you look at people who are exporting logs, they are obviously exporting it and making money. But if they are going to keep the log here and get better money for it, it is a pretty simple equation—you are going to keep it here. I know recently down at Eden they are looking at putting in additional processing capacity down there. For our business, which has an flow-on straight into the frame and truss market, that is really exciting. That is seriously exciting because that is bringing back into our domestic economy and adding value all the way down the value stream on wood fibre that otherwise would have left this country in a raw form. I think it is very exciting.

**The Hon. MICK VEITCH:** Mr Snelson, when we were at your Oberon facility you highlighted to the Committee—and most of us actually travelled on the road—that there is a productivity constraint essentially in and out of Oberon. There is a proposal from the community around how to fix that productivity constraint, that roadway. I would really appreciate if you could put on the record what the issue is and what is the community's proposal to address that issue.

**JIM SNELSON:** You travelled one of the roads on your way to get there.

**The Hon. MICK VEITCH:** And the other one to go back.

**JIM SNELSON:** Yes, via Tarana. The road in and out of Oberon is a narrow road. It has a number of bridges on it but one bridge in particular has some weight constraints. There are some safety issues around the number of trucks that are moving in and out of Oberon, not only our trucks but the trucks that support the Highland Pine Products plant and also the Australian Native Landscapes plant. So there's a safety issue there, there's a wildlife issue there and there's a weight limitation on that road, which has been looked at a number of times and has been partially addressed. There is some work being done at the moment around the potential of some feasibility around rail links in and out of Oberon as well, which are in the very early stages.

**The Hon. MICK VEITCH:** What was the number of truck movements in both directions?

**JIM SNELSON:** I haven't got those numbers off the top of my head. There's at least 100 trucks loaded at Oberon. Depending on the day, between 70 to 100 trucks are loaded at our Oberon facility, let alone what's coming in and out of Highland Pine.

**The Hon. MICK VEITCH:** You mentioned the numbers of the other facility as well. From memory, you put it in the vicinity of about 150/200 truck movements in one direction.

**JIM SNELSON:** Yes, it would be. It's crazy.

**The Hon. MICK VEITCH:** Those trucks also come back the other way.

**JIM SNELSON:** Yes.

**The Hon. MICK VEITCH:** So if you think about that on that road, it becomes an issue, and the rail linkage. The other thing I would like to raise is the issue of research and development. Some of the work at your facility in Oberon, Mr Snelson, was quite mind-boggling. I am quite appreciative of the effort that your company is putting into developing new ways of processing, for example. Do you think that there is sufficient money put into research and development in this space in New South Wales? You are sitting before the Committee members on our final hearing day. If you were to make a recommendation to the Government about that, what would it look like?

**JIM SNELSON:** It goes to my opening statement, Deputy Chair. The processing sector, in particular, needs to have the confidence to invest. Throughout my career, I have worked for a number of public companies, and the concern in the larger public companies is the payback analysis and the payback periods that come with those substantial investments. So that new particle board line that you walked down alongside, that was over $100 million of investment, and the returns on the particle board product are quite low. So you need to have long-term horizons if you're investing in that sort of technology. To have long-term horizons, you need confidence in your supply of wood fibre to support that investment in the processing technology. Does that make sense?

**The Hon. MICK VEITCH:** Yes.

**JIM SNELSON:** There's a basic economic principle there that you need to climb over. The R&D then comes from the investing company to look for that best technology around the world. I don't think it's necessarily the responsibility of government to do that R&D. There may be R&D incentives that come with that. But as the chief executive of Borg Manufacturing, I'd say that we're masters of our own destiny when it comes to investing in the R&D. I think it's better to come from the private sector. Warwick may have a different view on it. In South Australia there's a CLT plant that's just recently been built. Other CLT plants have been built in the country, trying to come up with innovative new wood-based products—engineered wood products—to substitute in for concrete and steel. They're largely coming from the private sector. I don't want to pass the responsibility to government.

**The Hon. MICK VEITCH:** But government could incentivise.

**JIM SNELSON:** If the Government could incentivise to do it and provide the environment where you've got long-term confidence to invest in that technology, then we will run with it.

**The Hon. MICK VEITCH:** Mr Drysdale?

**WARWICK DRYSDALE:** Obviously, my own operation is a lot smaller. But my wife and I made a couple of million dollars' investment a couple of years ago, and we still have probably around about 40 per cent capacity available. You make those decisions ahead of time, looking at what resource you do have available. It doesn't matter who you are, you do need to look at what the long-term synopsis is.

The thing that I think would be very important for a lot of people is to maybe reassess what happens with the grants scheme. Because, I think, as Jim says, the private sector have got to put their hand in their pocket. We already have skin in the game in a fairly serious way. It would be nice to think that somebody, at some point, would come along and give us a bit of a hug or a pat on the back and say, "Well, we understand you guys are actually trying to achieve something here. Can we assist you?" You know, we have applied for grants in the past. Jim probably has a whole department that probably applies for grants. But when you are a small business, these things can become more complicated and more difficult than what they are.

Innovation does not necessarily come from big business. Innovation tends to come, a lot of the time, from small business. I think any encouragement of that would be very, very important. Members of the FTMA, I mean, they are investing more and more in technology now to improve their efficiencies and outputs. I am sure all the members of FTMA would appreciate the understanding that there is government support, and understanding of what they are actually trying to achieve and to not make the process too administratively difficult.

**Mr JUSTIN FIELD:** Obviously—you have both alluded to it—we are talking about access to fibre here. The biggest uncertainty is enough supply. You were clear with us, Mr Snelson, out there, and I would say that you will have an opinion on this. I want to go to that question of what investment is needed in State-owned plantations going forward. We were out there and it was pretty clear that Forestry Corporation either were not prepared to make the investment, or it was too expensive for new land—but you indicated to us that you are making some of those investments in new plantations. I am wondering how you can do it when they can't. Or maybe it is just a matter of there not being too high a price to pay for land to do this, because we need the resource. Because that material is ultimately going to be needed for our economy, for businesses, for homes or whatever it is.

I am just trying to understand how we go about making recommendations around the future of the softwood plantations. I asked the question of the previous witnesses, which you heard. It takes 30 years to grow these trees. If we want to increase supply of Pinus radiata across New South Wales, by the time they have grown to maturity, is the sector going to have moved on and found new products? Or are we going to need to make that investment no matter the cost?

**WARWICK DRYSDALE:** I think that what will happen in time is that we, like in all business—and technology is getting better and we get more efficient and more capable of extracting the value that's hidden in all the products, especially some of the plantation product we have. In 30 years' time, it is going to have a completely different value as to what we are looking to plant now. The problem is you have got to put up a lot of money up front and have that sitting there for that time. So things like your carbon farming initiatives, and things like that, and looking at carbon price, that can give growers some return throughout the process, is probably very worth considering.

**Mr JUSTIN FIELD:** You think the private sector can play a bigger role in plantations than they currently are, in that way?

**WARWICK DRYSDALE:** Potentially. I am not an expert in this area, and I am sort of stepping outside my area of any serious knowledge. But companies who are utilising wood fibre for purposes other than timber are able to probably look at some of these things a bit more closely than what's happening with timber. Because there is some uncertainty. You look at timber prices globally, they are very volatile. There is an index; they trade futures on the Chicago Mercantile Exchange. Prices two years ago—the number doesn't mean much because it is in million board feet in US dollars, but the scale is the interesting thing. It was trading around $450, things went mad, it went up to $1,600, plummeted back to $500, back up to $1,400, and now—I looked at it this morning—it is back down to about $600. There's a massive volatility. Obviously, it has been an extreme situation through COVID and things, just recently. But global wood price is a lot more volatile than what we have seen in our local market. If we saw the same volatility here, that would probably make some of those investment decisions even more difficult.

**Mr JUSTIN FIELD:** Mr Snelson, you're making those financial decisions as a company, so what would your recommendation be to this Committee around what we should be advising government?

**JIM SNELSON:** Look, I think it is a challenge. I think the economics still need to stand up. The issue with land prices at the moment has made that much more challenging. COVID and the regionalisation of a lot of the residents of Sydney and the bigger cities moving out to the country, particularly if you go out to Oberon—as you know, it is a 2½- to 2¾-hour trip there from Sydney—people are buying up land and land prices are high. Yes, we are doing it, but clearly it is dictated by the economics at the time. It still has to be feasible. Maybe it is naive to say it, but I still think we need vision here. I think we need a really long-term horizon to think about what New South Wales, what Australia will need in the next 30, 60 or 90 years.

I think timber, I think wood has an important role to play in housing Australians well into the future—not only housing Australians, but also providing the joinery and all of the flooring products and everything else that I mentioned before. I think government needs to think about—as your predecessors did 100 or so years ago—making that investment in forestry for the long term because I do think that—and Warwick touched on it a moment ago—we will find ways to continue to use that product efficiently and effectively well into the future. It has been around for millions of years. People have been using wood for a long time and they will be using it for a long time into the future. Whether it is private sector, they will continue to invest and do some research and development and find ways to use that product effectively.

The great thing about those logs and those Pinus radiata trees—and, again, as you saw when you visited Oberon—every skerrick of that tree is used. The biomass that is left in the forest—and I think you went out to the forestry area—is used as fertiliser for soil health anyway. There is probably some product out of that biomass that we could still try and recover. It has not been cost effective in the past but it could be cost effective in the future to find more pulp to use to make more wood-fibre products. Whether it is landscaping—Australian Native Landscapes is next to us at Oberon as well—or whether it is the bark that we use as fuel, it is just such a great product.

I know I am obviously biased because I have been in the sector for a long time, but it is such a great product and it lines up so perfectly with the current discussions around the circular economy and climate change. Just have a look at the Federal election on the weekend and the teal candidates and the power of climate change that came into that campaign. The vision would be—whether it is private sector or government, someone needs to continue to invest. We talk in generalities or big-picture numbers about the billion extra trees, but for mine it is not happening fast enough. I think there are lots of words and not enough action. We are attempting to take action as a company, but I think it needs a bigger push.

**The Hon. SCOTT BARRETT:** You talked about climate change and the teal push. Are we seeing a demand or a want from consumers to shift away from timber? We seem to have the local supply concerns, the import concerns and the alleged resistance from community towards forestry, yet we are still using 75 per cent timber in our construction. I am guessing it is greater than that in cabinetry and stuff.

**JIM SNELSON:** Yes, it is.

**The Hon. SCOTT BARRETT:** Why is that not shifting?

**WARWICK DRYSDALE:** I think if you have a look for a long time now the forest industry has received a lot of bad press, and obviously I believe unfair press, about what happens with the use of forest products.

As I said in my opening submission, the global demand for wood products is growing, and growing per capita. People are understanding that the use of timber is exactly as Jim says. We are now talking about the circular economy and the utilisation of a wood resource, which does grow—it is the ultimate renewable. If you are looking for solar panels, it is great that Jim has a heap on his factory. I have a heap on my factory. But you have got, what, 20 million hectares of solar panel happening here in this State, and they are called trees. I think people are understanding that the value a tree has. If we can utilise that rather than using other materials that have a higher embodied energy, it is a good thing for the environment, not a bad thing. I would like to think that 70 per cent goes to 80 per cent, 90 per cent. I think the community is understanding that now.

**The Hon. SCOTT BARRETT:** Can I just ask one more quick question of you, Mr Drysdale? Your FTMA, you have obviously got some concerns about the future of the timber industry. With your members in Victoria and Western Australia, what is the feel there as we shift away from forestry?

**The Hon. MICK VEITCH:** Sorry, away from hardwood, not forestry.

**The Hon. SCOTT BARRETT:** From hardwood, sorry.

**The Hon. MICK VEITCH:** Just to be clear.

**WARWICK DRYSDALE:** I think it is a compounding effect, really, especially in Victoria. A lot of F17 hardwood was used down there, Vic ash coming out of the forests there. There is going to be a whole lot of conjecture, of course, about the sustainability of how they do that. You are not going to get better at it if you stop doing it. I think that the answer is that we get better at doing things; we do not just stop doing things. Just because somebody speeds or you have a car crash, it doesn't mean you ban cars on the road. You go and you address the problem. You make better cars. You make better roads. You don't ban cars. On that basis, there's probably a bit of headshaking going on there about, "Well, how does this make any sense? How do we get better if we stop it?"

**The Hon. SCOTT BARRETT:** Thank you for that very important clarification.

**Mr JUSTIN FIELD:** Could I ask one follow-up quickly, because I know we are going to lunch—

**The CHAIR:** We are over time.

**Mr JUSTIN FIELD:** —but just on that last point, I think you were at the back during the Housing Industry Association's evidence and you might have heard that I asked that question about those hardwood products. The indication was that, yes, if it's accessible, such as in Victoria because we're doing it, they might find that a useful product, but where it is not accessible in Canberra—

**WARWICK DRYSDALE:** Well, it was—

**Mr JUSTIN FIELD:** —just go with an engineered product and it's probably cheaper. Obviously that resistance to forestry is focused almost exclusively on the native hardwood sector and there is not really any resistance to the softwood sector. I am just wondering if those alternatives are quite clear there and ultimately that is not as disruptive as some might make out.

**WARWICK DRYSDALE:** I think if we look at the use of hardwood in the frame and truss industry, it has certainly decreased over time. That is primarily based on availability, and they have sought alternatives and it is coming out of LVL. There's an LVL plant in Western Australia—I don't think that was actually mentioned in a previous submission. I think it produces something like 30 per cent of our needs—but I'm not sure. I'll have to take that on notice. But the hardwood is not available so we have gone to an imported—primarily by great percentage—an imported LVL. If the product was available back in Australia as a hardwood product, it would move back if the price and span scenario worked. If somebody wants their house built, I don't think they're really going to say, "Is that an imported, managed-forest LVL or is it a domestic managed-forest solid piece of timber?"

**Mr JUSTIN FIELD:** With the supply, we could have an LVL facility on the east coast, though, I assume. It is just a matter of supply.

**WARWICK DRYSDALE:** We're back to supply and we're back to the economics. You're not going to get away from it. It's going to come back every single time.

**JIM SNELSON:** Without going on too much further, LVL is not as easy to make. In a previous life when I was with Carter Holt Harvey, we closed down the Nangwarry LVL facility in South Australia. LVL requires a higher strength veneer to make the quality of the product. Wesbeam in Western Australia is, as Warwick said, the only manufacturer of LVL domestically at the moment. They mix some hardwood in with their softwood to get the strength characteristics required of that LVL.

**The CHAIR:** That well and truly takes us to time, but I think we could probably sit here and talk for hours to you guys. Thank you for your time and the information you have provided. Once again, thank you, Jim, for giving us that fantastic tour. I believe you may have taken a couple of questions on notice. The Committee secretariat will be in touch about that. Once again, thank you both for coming in today.

**(The witnesses withdrew.)**

**(Luncheon adjournment)**

**Mr NICK MILHAM**, Group Director, Forestry Policy, Research and Development, Department of Primary Industries, on former affirmation

**Dr BRAD LAW**, Principal Research Scientist, Department of Primary Industries, on former affirmation

**Mr STEVE ORR**, Chief Executive Officer, Local Land Services, affirmed and examined

**Dr ADAM TYNDALL**, Executive Director, Policy and Strategic Reform, Local Land Services, on former oath

**Dr GEORGINA KELLY**, Executive Director, Science, Economics and Insights, Department of Planning and Environment, sworn and examined

**Dr TOM CELEBREZZE**, Interim Director, Remote Sensing and Landscape Science Branch, Science, Economics and Insights, Department of Planning and Environment, affirmed and examined

**The CHAIR:** Welcome back. Would anyone like to make a short opening statement?

**BRAD LAW:** Not from DPI.

**GEORGINA KELLY:** Not from DPE.

**The CHAIR:** Excellent. This is our last hearing. I imagine you have been following reasonably closely what we have been doing. Is there anything that has been put to us through submissions, through evidence, on site visits or in evidence today that you want to respond to or clarify? Has anything changed from your submission from 27 May last year that you want to update the Committee on? I thought I would provide that opportunity to you now.

**NICK MILHAM:** Chair, there was evidence given to the Committee at the Coffs Harbour hearing around Dr Law's research, querying its validity and the conclusions that were drawn from that research. We would like the opportunity to respond to those comments.

**The CHAIR:** By all means.

**NICK MILHAM:** I will hand it to Dr Law.

**BRAD LAW:** I would just like to say that our research generally is very consistent with previous science that has been done on koalas in the forestry space and regenerating areas as well. That includes studies on koalas in regeneration on ex-mine sites and recent research on koalas in bluegum plantations in Victoria. We went to great lengths to be careful about designing our study. We made sure that we had control—unharvested sites—so that way we could account for any environmental differences from year to year in the comparisons that we made. That is a standard thing to do in scientific experiments. We also undertook sophisticated modelling to estimate koala density. To do that we contracted a world-leading expert from Canada to do the modelling for us. Prior to doing the experiment, we validated that method across a range of different sites in New South Wales to show that we do get plausible koala estimates from that approach.

During the experiment we used koala detection dogs to collect fresh scats so that we could do genetic analysis on the individuals at one of our study sites to look at sex ratio and also estimate the number of individuals using a different method, and that produced a comparable estimate to our acoustic method. Also, on top of that acoustic approach, we've been doing other research—for example, GPS tracking of koalas in forestry landscapes. That is looking at how individuals use that landscape; getting fine scale information on use of regenerating areas and exclusion areas and adjacent areas. So all those results together are supporting our conclusions in our paper, and those other scientific studies are also reviewed in that published scientific paper.

**NICK MILHAM:** If I might add to that? While I appreciate that there's been other views expressed to the Committee in the various hearings, Dr Law's research, particularly relating to the impact of selective harvesting at different periods of time on koala presence and density, is quite unique. In fact, there isn't comparative analysis being done by others that could be directly compared to the work that Brad has done.

**STEVE ORR:** Probably the main thing, from Local Land Services' perspective, is the commencement of the new PNF codes on 2 May. Obviously, following the NRC report, which recommended that the codes be made by the Minister for agriculture and western New South Wales, with the concurrence of the Minister for the environment—that concurrence was ultimately provided by the Minister for the environment and the new codes commenced on 2 May, which I understand the Committee would be aware of. I might ask Dr Tyndall just to elaborate on a couple of key points regarding the codes, if it is helpful for the Committee.

**ADAM TYNDALL:** I think there are a couple of things to stress in terms of the new codes of practice. The first is the NRC's findings on those new codes. The first is that they were a substantive improvement on the previous codes of practice; that they filled all of the Minister's legislative requirements, particularly those around ecologically sustainable forest management; that they met the dual commitments the Government had made in terms of robust protections for koalas and certainty and consistency for primary producers; and importantly that they provide greater clarity and ease of use for landholders. So it is a really good outcome in terms of those new codes of practice.

**GEORGINA KELLY:** With respect to koala research, you will be aware that the Koala Strategy has committed $193.3 million to the next phase of the Koala Strategy, with $43 million to more research and gathering of information which will fill the gaps identified in the first phase of the strategy. The Department of Planning and Environment also has its New South Wales Wildlife Drone Hub, so we are researching thermal drones to look at occupancy and presence of koalas. It is six times more efficient than some of the other methods, and so that will also help us to identify not just transitory presence of koalas but populations. There will be a baseline assessment done by 2025, looking at up to 50 koala populations, and there will be, obviously, an opportunity to harmonise and compare the various methods for koala population and presence. So there is an opportunity there to continue to harmonise all of the science for understanding koala populations.

On that harmonising of science, that was also done for the PNF codes—for the mapping, for the interim koala prescription map, where, for the North Coast code, we looked at harmonising our colleagues' mapping work from DPI with that of the mapping work from the Koala Habitat Information Base. That has informed the tree species, which have increased in the PNF code from the 10 primary feed and five secondary feed, to 15 primary feed and five. The new codes include not just records of koalas but also prescriptions, or a guidance layer—the PNF koala prescription layer—which is an interim layer that indicates high to very high koala habitat for those four code regions.

**The Hon. MICK VEITCH:** My first couple of questions are probably to Mr Milham. I'm not quite sure how they fit in with Forestry policy on research and development. One of the things that has been exercising the minds of the Committee members is the purchasing of land for plantation and the economics behind that. We've heard that whenever Forestry Corporation is in the market trying to purchase, it is getting bumped out at the auction stage. Others have presented testimony that the land is good agricultural land and too valuable to be putting down under softwood plantation, in particular. Do you do that sort of economic modelling in your section of DPI, Mr Milham?

**NICK MILHAM:** The answer to that is no. We don't actually do it, but we have sponsored that type of work to be done. A few years ago we had a consulting company look at the economics of plantation forestry and what the impediments were, particularly to private investment in plantation forestry. They are reasonably obvious, in a way. My background is in economics, not in forestry, so I can understand that the primary challenge is primarily associated with the length of time before you get a payback from the investment and then the risk associated with that. The pay-offs tend to be reasonably competitive, but you have to wait such a long time and there is such a high level of risk associated with that that it is a challenge for private investors. However, what we are now seeing with developments in the carbon market is and the potential for biodiversity offsets in certain types of plantation developments and increased opportunities in relation to the use of residues from sawlog production. All those things are starting to add up to improving the economics of plantation investment as an opportunity for private investors.

**The Hon. MICK VEITCH:** Those emerging opportunities arising from carbon markets and the like, is there any work being done on that at the moment that could value-add moving towards plantation?

**NICK MILHAM:** We're doing some work internally, which has only just commenced, in relation to developing some guides on how a farm landholder or a rural landholder who wanted, or is considering, a plantation investment might then access carbon market opportunities. We are basically trying to get some information out there that would help those who probably don't have the opportunities and the access to information that would assist them in making an informed decision. We're working with our colleagues in Local Land Services in relation to how we might get that information out to landholders so they can make use of it when they're considering their enterprise opportunities on their landholding.

**The Hon. MICK VEITCH:** On another matter, I've been pursuing research and development with a number of witnesses and how that is funded, what it looks like and how it can be incentivised. From within the department's resources, what sort of research and development is the Government involved in?

**NICK MILHAM:** I'm not quite clear on what you're asking.

**The Hon. MICK VEITCH:** What sort of research and development is DPI involved in around forestry? Are you doing any work to assist? Are you doing any joint partnership work research?

**NICK MILHAM:** We've got a number of focus areas for our research, which are primarily in the area of forest science. We've got a big focus on forest biosecurity, so forest health and biosecurity challenges within both plantation and native forestry. Within our team, for example, we've got Australian leaders in relation to plant diseases such as myrtle rust and dieback, those types of challenges. We undertake surveying, and that includes at high-risk points of entry, such as around Port Kembla and those types of things. It's that biosecurity side of things.

We are also doing work in forest ecology. That is primarily not designed to support industry development, except insofar as seeking to ensure that the regulatory settings that we have in place for forestry, whether they be in plantation forestry or in native forestry, are effective at achieving their objectives or, in fact, whether they then may need to be modified, hence the reason why people like Brad are doing the work they're doing. It is to support the Government's regulatory settings. We also do a fair bit of work with industry funding, largely through organisations like the Forestry Corporation—but not only through the corporation, through other funding sources as well—in forest resource assessment, which has an increasing focus on remote methods to assist in assessing the amount of harvestable material that is in a forest area, which then obviously helps with making your harvesting plans. It gives you information, before you actually make a decision about going into harvest, about what you're likely to get out of that area. They're key areas of focus for us.

**The Hon. MICK VEITCH:** In that biosecurity research, are we putting a cost on weeds? For instance, we were at Tumut, I think, and the Softwoods Working Group presented some figures. I think it was a $2,500 per hectare per year impact on the productive gain from softwood plantation arising just from blackberry. In that biosecurity research that you were talking about a bit earlier, are we looking at the cost impact on price of weeds and pests?

**NICK MILHAM:** No, not within my group. We're not looking at weeds. In that biosecurity space, we're primarily looking at pests that actually affect the trees themselves.

**The Hon. MICK VEITCH:** Is there anyone in DPI looking at that?

**NICK MILHAM:** Within forests, I don't believe so. More broadly, I would need to take that on notice in relation to that.

**The Hon. MICK VEITCH:** If you could. I would be keen to see who in government is actually looking at this. Mr Orr, the PNF Code that has just been put in place is important. The concurrence is between the Minister for Agriculture, and Minister for Western New South Wales, and the Minister for Environment and Heritage. Is that correct?

**STEVE ORR:** That's correct.

**The Hon. MICK VEITCH:** How does that work? Do they sign it together? Does one sign it and then send off the brief to the other Minister to sign it? How does that concurrence work? I just want to get my head around that.

**STEVE ORR:** Obviously, the NRC handed down its report. There was then further discussions between LLS, EPA and now EHG to work through a series of issues. Those discussions ultimately landed on a couple of issues, which we still needed to work through. Having done that—and there was agreement between everyone—the Minister for the environment was provided with a copy of the codes. He wrote to the Minister for Agriculture and western New South Wales indicating his concurrence to the codes. Ultimately, having received that concurrence, the Minister for the environment also signed the codes, as you will note in the document. The Minister for Agriculture and western New South Wales then had the authority to sign off on the codes.

**The Hon. MICK VEITCH:** Is there a review phase? You've changed—

**STEVE ORR:** Twelve months.

**The Hon. MICK VEITCH:** Twelve months.

**STEVE ORR:** Yes.

**The Hon. MICK VEITCH:** Thank you.

**NICK MILHAM:** Excuse me, Mr Veitch, if I could come back to your first question to me. I neglected to mention our forest carbon cycling research. To be able to underpin information that might go in a carbon guide out to someone who is thinking about plantation, for example, we need to know about what the carbon cycling actually is within our forests. We have significant research activity and capability within that space.

**The Hon. MICK VEITCH:** I think where I was going, Mr Milham, with that question is not that there is no research and development being undertaken. As your response has clearly indicated, there is a body of research being undertaken. Just important to get that on the record, that it is actually being undertaken, and, I guess, trying to get a bit of an idea about how that fits in with some of the private sector investment as well. That is where we were going. I am glad you are doing that carbon cycling. That is pretty important work.

**Mr JUSTIN FIELD:** Could I jump into the plantations quickly. Mr Milham, DPI sets the policy parameters—Government does and DPI implements. I am just trying to understand the role that you play in setting a plantation policy. Forestry Corporation has some money, I think, to try and find some land and expand the softwood plantations. Does DPI or Government have a target on the softwood and hardwood plantations they would like to see operating in New South Wales?

**NICK MILHAM:** We've set ourselves an internal target which reflects the fact that the Commonwealth, the Australian Government has set a plantation expansion target. We've set ourselves an internal target of trying to increase the plantation estate, doing what we can, by 10 per cent by 2030.

**Mr JUSTIN FIELD:** What would that take it to? That is the softwood plantation estate?

**NICK MILHAM:** That's the total plantation estate. That would take it to—I do have those numbers here. About 439,000 hectares, I think, is the—

**Mr JUSTIN FIELD:** Can you provide the breakdown between softwood and hardwood?

**NICK MILHAM:** We haven't separated out—we don't have a separate target for softwood versus hardwood. We're keen to do what we can, particularly through working with private landholders in that farm forestry space, to try and encourage increased plantation development. This is private sector plantation development as apart from the Forestry Corporation.

**Mr JUSTIN FIELD:** Why wouldn't you? It's the softwood plantations, which seem to be the real sort of challenge here for industry and the key driver of a lot of the economic use of timber, the need for the construction industry. We have had all of the softwood users coming to us, saying, "We don't have security of supply." Government, obviously, is the biggest at the moment. Why wouldn't that be the focus? Is hardwood the focus? It seems like that might be if farm-based forestry is your focus.

**NICK MILHAM:** No. By using the term "farm forestry", that's a catch-all term for both plantation forestry and native forestry on farms, just on private landholdings. While the softwood estate is, obviously, the vast majority of the plantation estate within New South Wales, there's also significant demand for hardwood timber over and above what we can supply from our native forests—what can be derived from the native forests.

**Mr JUSTIN FIELD:** Is there?

**NICK MILHAM:** So expanding the plantation estate, the hardwood plantation estate is—

**Mr JUSTIN FIELD:** Forestry Corporation has been logging well under the sustainable yield of their forests for over a decade now. If there is demand, what is going on there?

**NICK MILHAM:** Probably best to address that question to the Forestry Corporation. I can provide a response in the broad sense. Obviously, the corporation must remain within the long-term ecologically sustainable yield of those forests. But then they also, because of their commercial imperative, can only really harvest where they can make money—

**Mr JUSTIN FIELD:** You are talking primarily pulp then, aren't you, really. Hardwood pulp is where the market would be interested, that you would be looking at hardwood plantations for.

**NICK MILHAM:** No. In terms of plantation development, we don't only use hardwood for pulp. Our flooring—

**Mr JUSTIN FIELD:** But that would be the biggest market driver. When you say there is a gap—we heard when we were on the North Coast that those hardwood plantations are not much chop for flooring and—

**NICK MILHAM:** There's significant challenges with large parts of the plantation estate that were planted under initiatives such as the managed investment scheme process, where there was poor species and regional selection. Setting aside the mistakes of the past, the broader issue is that there is significant unmet demand for hardwood timber for a variety of high-quality uses other than pulp—for example, your spotted gum flooring and power poles and bridges and piles, pallets. There's all sorts of uses of hardwood that require sawn timber. That sawn timber, particularly from our native forests, can only be produced as by-products of operations where the primary purpose is high quality—

**Mr JUSTIN FIELD:** How many hectares of new hardwood plantation has been established in New South Wales in the last decade?

**NICK MILHAM:** I would need to take that question on notice.

**Mr JUSTIN FIELD:** Virtually none, right?

**NICK MILHAM:** We have our regulated—

**Mr JUSTIN FIELD:** It's pretty much none, isn't it? Why can't you tell us that?

**NICK MILHAM:** It's been very low, absolutely. There has been very little private investment.

**Mr JUSTIN FIELD:** You are relying on private investment; you are not really looking at expanding on the existing State-owned hardwood plantation or State-owned softwood plantation estate. That seems to be the policy position.

**NICK MILHAM:** Not entirely. There has been New South Wales Government injections into the Forestry Corporation in recent years specifically for the purpose of assisting them in increasing their plantation estate.

**Mr JUSTIN FIELD:** How many hectares of new softwood plantations have been able to be established in the last 10 years?

**NICK MILHAM:** By the Forestry Corporation? That would need to be addressed to the corporation.

**Mr JUSTIN FIELD:** Thank you. That is all I have got on plantations, but I would be keen to come back.

**The Hon. SCOTT BARRETT:** We heard some research from the University of Newcastle this morning specifically about the Great Koala Park creating 9,000 or 10,000 jobs at the cost of only 600 or 700 jobs. We worked out that the 9,000 jobs included indirect jobs, but the 600 jobs were forestry jobs only. Can someone give us a picture about what indirect jobs are associated with the forestry industry and have we got any numbers around that?

**NICK MILHAM:** Within the Department of Primary Industries we have a group. It's not part of forestry; it's part of a broader department that undertakes analysis of the economics of various primary industries. They do the analysis of employment and value-add in forestry as well for us. They have generated estimates and they are published in our *Performance Data and Insights* publication, which is online every year. The estimates that they provide—and they are estimates, anyone who purports to have some accurate industry data below the State level, it is not in fact the case. The Australian Bureau of Statistics labour statistics simply don't drop down to that sort of level, particularly when you are trying to distinguish between hardwood and softwood. Our *Performance Data & Insights* team do estimates for us. I have some estimates in front of me and if we are talking, particularly North Coast, which is where the great koala national park proposal is based, the estimates provided to us of employment in the hardwood sector up on the North Coast is about 2,600 jobs in that region.

**The Hon. SCOTT BARRETT:** Is that direct jobs?

**NICK MILHAM:** That is in the value chain for forestry and first stage processing as well.

**The Hon. SCOTT BARRETT:** What about the support services, the mechanics and tyre shops?

**NICK MILHAM:** They would be on top of that.

**The Hon. SCOTT BARRETT:** We have no any indication of what that might be?

**NICK MILHAM:** No, I'm sorry, I couldn't provide that information.

**The Hon. SCOTT BARRETT:** Going back to your research, Dr Law, there seems to be a lot of "my research is bigger than yours" throughout this whole process. How do we get to the point where research is so conflicting, and how do I wade through that?

**BRAD LAW:** I guess really I would say the research is not conflicting. In our published paper outlining the results of our research we reviewed other research that has been done on koalas and forestry. No-one has done this before-and-after harvesting experiment like we have done to look at density. But there are other pieces of research where people have looked at parts of the puzzle, I guess. Generally, that is consistent with the findings that we found, that koalas can live in a range of different situations. I think their response to a disturbance like forestry depends on how much of the forest is retained at the time. Across State forests broadly, 57 per cent of the State forest landscape is not harvested. That is really important in providing refuge areas for koalas. The study that we looked at was selective harvesting, so there are a lot of trees that are retained in addition to those exclusion areas. As I say, most of the research is actually consistent, or all of the research I would say is consistent with our findings.

**The Hon. SCOTT BARRETT:** I am jumping around a little bit because there are few things I need to come back and tie off. We also heard this morning about using timber as a substitute for other more carbon-intensive products. Can someone elaborate on that for me? By the same token we are hearing that 74 per cent to 75 per cent of construction material is still timber. Why are we still using timber and not shifting to other more environmentally friendly products?

**NICK MILHAM:** We don't have our carbon scientific experts here with us, but a couple of them work for me. I can pass on the types of comments that I am sure they would make if they were here. One of the obvious ones is that the research has demonstrated that timber as a product—when you take into account even timber from native forests and the full substitution metrics of alternative products, particularly if you think in the construction space of things like cement, concrete and steel, which are high carbon, mined non-renewable resources. When you take into account all of those factors, then timber has by far the lowest carbon footprint. In fact, it is a carbon sequestering building material. On top of that, it is totally renewable. We regrow it and you can do it again. We have got those types of factors to take into account. What we are seeing is that is being reflected in increasing demand for timber in construction.

I certainly personally expect to see more of that into the future, not just as a consequence of the rising demand for increased housing construction due to population growth but also due to matters such as the changes to the residential dwelling construction code, announced in New South Wales just last year by Minister Stokes. That is the BASIX code, which is requiring reduced greenhouse gas emissions from new residential dwelling construction. Changes to the National Construction Code back in 2019 allow medium rise construction out of timber, up to 25 metres. We are seeing increased interest in that space. There is a lot of interest within the construction sector. Those who are doing the designs for construction are utilising opportunities to reduce the emission factors associated with those buildings. Timber is an obvious way of actually doing that, because of the lower carbon footprint associated with that as a construction material.

**The Hon. SCOTT BARRETT:** Do you need longer beams or different types of timber to go higher?

**NICK MILHAM:** The main interest, particularly for the higher medium-rise construction, is in manufactured timber products. It is a really interesting development that has happened probably in the last 15 years within the forestry sector. It has provided opportunities for increased value from timber products and from what might otherwise be residues, and in some cases be treated as a waste or by-product. It has actually become a product of significant value enabling construction of building components that meet those high engineering standards that previously we had thought you could only get from either very heavy timbers or from concrete and steel. That is now no longer the case.

**The Hon. SCOTT BARRETT:** Going back to the questions about research and development, have we done any work to suggest that in 10, 20 or 30 years that 75 per cent will change or stay the same? Do we have any vision on that?

**NICK MILHAM:** We have not done any research on that. Personally I expect that may rise. If, as we did last year, we introduced additional requirements in relation to increasing the thermal efficiency of buildings—wood is a natural insulator—you might expect to see increased interest in the use of timber panelling for example, which we tend not to do a lot of. We tend to have gone out of that in the last hundred years or so, but I would expect there may well be increased interest in moving back into that type of use of timber in order to meet the challenge of reducing the carbon footprint of those buildings, as well as the fact that, as I mentioned, it has natural thermal properties and it is a beautiful product. It certainly looks nice and that is an attractive thing in its own right.

**Mr JUSTIN FIELD:** It is more flood resistant as well, isn't it? You would not have to replace the whole sheet.

**NICK MILHAM:** My understanding is because it is a flexible product, it is more earthquake resistant and has all sorts of other properties that make timber construction of significant interest in the medium and now high-rise sector.

**The Hon. MICK VEITCH:** Dr Kelly, in your opening address you spoke about mapping. You drew off some of the mapping from LLS or DPI. Can you elaborate on what mapping the department does in this space?

**GEORGINA KELLY:** The Department of Planning and Environment launched the Koala Habitat Information Base in 2019, which is significant mapping of land cover change but also to understand where a koala habitat is both from low to very high suitability habitat. We have mapped that for the State and have those classes in six levels from low to very high suitability. For the purposes of the PNF koala prescription layer, our colleagues in DPI also have done mapping in the North Coast area. It was for a different purpose and at a different scale. Nevertheless, taking up the point that Dr Law made about the contributing science—not conflicting science—we worked together with DPI to bring together that mapping for the North Coast area where we looked at what the two highest levels of koala habitat suitability were, high to very high, and the map reflects where either DPI or DPE considers that to be the case. That is for the north coast PNF code. There are three others where DPI has not done the mapping and so that then refers to Planning and Environment's model mapping.

**The Hon. MICK VEITCH:** Post the bushfires, were you involved in the extent and severity mapping?

**GEORGINA KELLY:** The fire extent and severity mapping, yes. My division has done that work.

**The Hon. MICK VEITCH:** You undertook that sort of mapping as well.

**GEORGINA KELLY:** Correct.

**The Hon. MICK VEITCH:** Does that include modelling as a predictor of future fire intensity? You did that sort of work as well?

**GEORGINA KELLY:** The FESM mapping was to look at the fire extent and severity mapping of the actual fires and is continuing to do work that is both modelled and ground-truthed. For the purposes of the 2019-20 bushfires, there were two phases of mapping: a very initial burnt area map because the difference between the severity can be different to the extent. You have the fireground as defined by Rural Fire Service, but what our division did was to come in using this modelling and ground-truthing to understand the severity throughout the canopy, whether it was just the canopy that was burnt or right down through to the understorey because that obviously informed the potential for recovery for both flora and fauna species. That was considered as part of our risk assessment advice to the EPA post the 2019-20 bushfires.

**The Hon. MICK VEITCH:** This might be a dumb question. That mapping was undertaken within a time frame post that fire event. Have we gone back in recent times to see what the regrowth has been like? Have we mapped the recovery?

**GEORGINA KELLY:** The work continues on, and, yes, we are trying to do it every 12 months because there is a difference between an initial flush post the fires and actual recovery. That work of fire extent and severity mapping continues on both, on the national park estate and also across the rest of the areas of the State.

**The Hon. MICK VEITCH:** Does the mapping include work around impacts of climate change?

**GEORGINA KELLY:** The fire extent and severity mapping does not at the moment, but, nevertheless, our division does do significant work on not only the climate change projections but also the impact of those climate change projections on a range of species. Dr Celebrezze has led the Biodiversity Indicator Program, which is New South Wales status and trends. There are a range of indicators that help us to understand the potential impacts of climate on those indicators. I would also note that the Bushfire Risk Research Management Hub did a significant amount of work post the fires for the Bushfire Inquiry to determine the impacts or otherwise of various land management practices on those mega-fires.

**The Hon. MICK VEITCH:** Clearly you are holding a fair body of work there that's pretty important and critical to a number of decisions that government would make. I take it that it's digitalised mapping; you're not still using old paper maps? We've moved to the current century.

**GEORGINA KELLY:** We have. Dr Celebrezze may like to comment.

**TOM CELEBREZZE:** Yes, I can comment. The New South Wales Biodiversity Indicator Program is a statutory program, which my team leads. We have a special resilience indicator in review. So it has been developed but it's in scientific peer review. It's a measure of ecosystem resilience to climate change, and it focuses on the capacity of biodiversity to persist as ecological niches shift due to climate change across the whole State. It incorporates the impacts of past clearing, loss of ecological condition and habitat fragmentation. Currently, the indicator does not specifically include the impacts of the 2019-20 fire. So it applies across the State. It is a modelled product and it is digital.

**The Hon. MICK VEITCH:** I want to go back to the PNF mapping. Dr Kelly, did I hear you correctly when you said that LLS and DPI had mapping for the north but not for the other divisions?

**GEORGINA KELLY:** That's correct. I will let DPI speak, but my understanding is that that mapping from DPI was predominantly for the Coastal IFOA, whereas DPE mapping is broader based across the State. So we took the advantage of taking the best science for the North Coast code and then relied on the DPE mapping for the other three codes' areas.

**The Hon. MICK VEITCH:** Did people challenge the mapping?

**GEORGINA KELLY:** Maps are always challenged, depending on how people receive them. Maps are as accurate as they can be and we always seek to improve them. That's also why there's a 12-month review period on these koala prescription maps. It allows for further modelling, further field validation, and there's a process of continual improvement for all maps. However, maps do give certainty to landholders. They are able to very quickly see where their requirements or otherwise are. So I think maps are generally a very helpful product to landholders as they make their decision and understand what's required of them on their land, and the various approval processes that, in this case for PNF, LLS would undertake.

**The Hon. MICK VEITCH:** This may be a question for LLS. If someone was to challenge the maps being utilised for PNF, as it applied to their parcel of land, what is the process to have the maps revisited or ground-truthed?

**GEORGINA KELLY:** For the purposes of the PNF koala prescription, should a landholder not think that the map is accurate, they have the ability to undertake their own survey and advise that. But LLS may like to add further.

**ADAM TYNDALL:** Yes, I am happy to add to that. There's a process in place in the codes themselves. It will require the landholder to identify the area in question and then get the survey conducted by suitably qualified experts—someone with three years experience either in forest science, natural resource management or environmental management. They'll do that against a protocol that will be available on our website. That process will then be undertaken by that suitably qualified expert and overseen by the NRC. As Georgina indicated earlier, that will be overseen in a 12-month process by the NRC to improve that mapping over time. It's relatively accurate in northern New South Wales, but there's less certainty in some of the other regions.

**The Hon. MICK VEITCH:** If I was a landholder who wanted to initiate that process, do I pay for those surveys to be redone or is the tab picked up by the Government?

**ADAM TYNDALL:** There will be a combination of two pathways. It is a suitably qualified expert to give people the opportunity to get someone to do it for them, provided they meet that threshold or qualification. There will also be an opportunity for LLS, EPA or EES staff who are suitably qualified to conduct those surveys.

**The Hon. MICK VEITCH:** So the mapping is pretty critical to the forest space, whether it be PNF or managing the native estate. That would be correct?

**GEORGINA KELLY:** Mapping always provides guidance and clarity for the landholders.

**NICK MILHAM:** If I might, Chair, in relation to the other climate change vulnerability assessment that is happening, we have a project within the Department of Primary Industries, which is a broad-based project of which forestry is only one part, and our particular part is focused on softwood. So there is research happening within DPI to assess the impacts of climate change across the broad landscape at a statewide level and how that may then impact on—obviously, the focus of DPI is on primary production opportunities, but there is an aspect of that which deals with the likely impact on softwood production.

**The Hon. MICK VEITCH:** When you say the "likely impact", is that solely an economic impact or is it environmental as well?

**NICK MILHAM:** No, that is the geophysical impact of the changing climate and what that might actually mean for where you could economically produce various primary industry commodities, of which one is plantation softwood.

**The CHAIR:** I might pick up on one area that Mr Barrett was talking about, which is the great koala national park. As Mr Barrett was saying, we had the University of Newcastle here and they indicated that they could not get any clear figures from the Government in terms of staffing of such a park. The figures around that were a bit vague and rubbery, to say the least. I am wondering whether the department has done any work on how such a park would have to be staffed at all. Ms Kelly, do you have any insight into that?

**GEORGINA KELLY:** I do not have that information here. We would have to take the question on notice.

**Mr JUSTIN FIELD:** I will focus a bit more on koalas. Dr Law, I appreciate your explanation at the start. The North East Forest Alliance has published a pretty specific critique of the science—or not so much the science, but I guess the findings. You would be aware that there have been some people on the political side of this debate who have used, to some degree, your science to suggest that koalas like logged forests, or even prefer logged forests. I think that is an unfortunate characterisation of it because the koala was, of course, declared by the New South Wales scientific community to be now in danger across New South Wales, and it identified logging as one of the many contributing factors to that. Your report is titled *Regulated timber harvesting does not reduce* *koala density in north-east forests of New South Wales.* Is it your contention, just to be clear, that logging is not negative on koala populations in New South Wales?

**BRAD LAW:** Yes, selective operations was what we looked at.

**Mr JUSTIN FIELD:** Under the CIFOA? To be specific, under the CIFOA, if our State forests are logged under those conditions, it is your evidence that that does not have a negative impact on koala populations?

**BRAD LAW:** That is correct—on the density of koalas as we measure them and under the conditions of the IFOA, where various exclusion zones are kept for environmental reasons, including for koala protection.

**Mr JUSTIN FIELD:** That is very qualified. Are you suggesting that across the balance, across the landscape, because there are protections over there in that part of the State forest and there is a national park over there, on a regional scale there are no impacts? Are you talking about no impact on the local population in that particular State forest?

**BRAD LAW:** Each of our study areas was about 400 hectares in size. A forestry compartment is probably approximately 250 hectares in size but within each compartment there is a mosaic of exclusion areas. It is not so much that there is protection over here and logging over here. Those areas are adjacent and they are intertwined as a mosaic. That is really critical for mitigating the potential impacts of forestry operations. That is what I think is the key factor.

**Mr JUSTIN FIELD:** As a layperson it is okay because when that area is logged the koala can just move over there, and then when those trees regrow a bit it will come and feed a bit over here. But you'd agree there's a net loss of feed resources for koalas from ongoing logging operations. If it was good-quality koala habitat for the koala populations to recover—at the moment they are declining. If forestry was good for koalas, at the end of the day we wouldn't have a continuing decline in koala populations. That's the way a layperson looks at it. That's the vibe, right? They move over there, trees come up and then they can move back. Maybe we stabilise koala populations within that mosaic, as you put it. It's not going to enable the koala to thrive, is it?

**BRAD LAW:** Our tracking shows that they're breeding in those areas. As I say, it's not that koalas are moving over there and at some point later in time they're coming back. In a selective operation, there are trees retained all through the operation as well as in those exclusion zones. They are using those trees that are retained for various reasons within the selective net harvest area.

**Mr JUSTIN FIELD:** But if there's a net loss of koala feed resource, which there is—and we know that some of the prime species are also the target species for the timber industry—the carrying capacity of those forests is less than it otherwise would be. That's fair to say, right?

**BRAD LAW:** It's fair to say that there is a net loss of trees, obviously, because—

**Mr JUSTIN FIELD:** No, a net loss of the capacity of those forests to sustain a greater koala population than might be there now.

**BRAD LAW:** I would say it's not necessarily clear that koalas are occurring at carrying capacity. There's a range of reasons that can generally keep animal populations below carrying capacity. It could be disease, it could be dog predation or a whole range of other factors that can keep an animal below carrying capacity so that some of those resources might be removed temporarily without necessarily impacting on the numbers.

**Mr JUSTIN FIELD:** One of the criticisms was that the control sites showed a consistent persistence of koalas but at some of the other sites it showed that there were large differences in calling activity, a decrease in the density of calling in a majority of locations and more areas where there was no calling activity. There is a suggestion that it basically describes presence rather than density in a meaningful way and that some of the conclusions that have been drawn really are pretty difficult to accept.

**BRAD LAW:** No, the method is designed to estimate density from calling animals in relation to their activity centres that we identify via an array of acoustic recorders. The purpose is to estimate density and there is no suggestion that the density has declined after harvesting. In our paper we present maps of that spatial distribution of calling activity. There is definitely some shifting over time of those activity centres. But also, if you look at those maps carefully, the scales on each of the maps before and after are different.

**Mr JUSTIN FIELD:** The specific analysis is there was a 36 per cent increase in areas of no or very low male koala calling frequency compared to the controls, which suggests a less persistent and maybe more variable population in those areas. Do you disagree with that?

**BRAD LAW:** Yes, I would disagree with that on the basis that the scales—if that's derived from the maps in our published paper—on those maps are different. The post-harvest estimates of activity centres are actually greater when you look at the scales on those maps.

**Mr JUSTIN FIELD:** The koala is now declared an endangered species in New South Wales. We've got the scientists here from DPI. We've got scientists—and I appreciate you are involved in mapping—from the DPE here. Would koalas be better off than they currently are if we were to protect those areas of critical koala habitat—and I am particularly talking about the koala hubs and the koala arks—from ongoing logging?

**GEORGINA KELLY:** Under the PNF codes, the existing KPoMs, that core koala habitat is also protected.

**Mr JUSTIN FIELD:** I am talking about the specific DPE analysis of the koala hubs in New South Wales. They were not made public, but through GIPAA they have been made public. We know that they exist and that there is a lot of crossover, including with current harvesting activities and planned harvesting activities. If those areas of koala hub, which the environment department in New South Wales has identified as critical for future protection, were protected from harvesting, would koalas be better off than they currently are or neutral?

**GEORGINA KELLY:** I will have to take that question on notice, other than to note that the original investment of some $44.7 million in the Koala Strategy is now $193 million, and we are seeking to do the base line and understand those populations. But I can take that specific question on notice.

**Mr JUSTIN FIELD:** If you were to use some of that $193 million to buy out the logging contracts and remove logging from those areas of core koala habitat—the koala hubs and koala arks—would that be a good use of money to boost koala populations in New South Wales?

**GEORGINA KELLY:** I am sorry, Mr Field, that is an opinion. I can take it on notice.

**Mr JUSTIN FIELD:** Not really. If those areas identified by the department were protected from logging, regardless of how you got some money there—I appreciate you saying that, but you are the scientist. If we stop logging those areas of critical koala habitat, would they be better off or neutral? I am assuming they will not be worse off.

**BRAD LAW:** Can I just clarify my response to your previous question? I have never said that logging of habitat is good for koalas. What I am saying is that the impact can be managed and mitigated.

**Mr JUSTIN FIELD:** Sure. I am taking this to that next level, because right now they are going backwards. We can manage the impacts, but they are currently going backwards at a statewide scale and at a population and regional scale as well, to be fair. I appreciate that, but would the populations have a chance to recover or be better off if we removed logging from those areas of the identified koala hubs and arks, which the environment department in New South Wales has identified as critical habitat for koalas, many of which are inside the harvestable area of our State forest?

**NICK MILHAM:** What Dr Law's research has demonstrated is that selective harvesting, as practised within the rule set defined by the coastal integrated forestry operations approval, is not having a detrimental effect on koala habitat.

**Mr JUSTIN FIELD:** Yes, I totally understand that, but right now koalas are going backwards. This is about the future of the timber industry, but injecting itself into that debate is the discussion about this particular iconic threatened species. I am wondering if they are better off—more likely to recover and get taken off the endangered list—if logging was to be removed from those areas of core koala habitat, those koala hubs and arks, many of which are currently in the harvestable area of our State forest? Is there no science to suggest that?

**The Hon. SCOTT BARRETT:** Point of order: Dr Kelly has already indicated that Mr Field is asking the opinion of these public servants.

**Mr JUSTIN FIELD:** That is a science question.

**The Hon. SCOTT BARRETT:** A couple of times they have pointed to the research in response to their answer. We are harping on about trying to get an opinion from the public servants.

**Mr JUSTIN FIELD:** No, I am asking for a scientific opinion. I think that is legitimate. We have scientists here prepared to go a certain point, but there is a logical next step. If you just say, "The science isn't clear on that," that is fine. If you say, "Look, we know that if we don't log, they will be, but our job is to balance the needs of the timber industry," that is fine too. But just saying, "We have $193 million," does not at all try to answer what I think is a legitimate question. I will give them one last chance, Chair, and move on.

**The CHAIR:** To be fair, I think Ms Kelly did agree to take it on notice and get back to you. If you want a full and wholesome answer, I think that would be best.

**Mr JUSTIN FIELD:** Dr Law looked like he was about to go there. Can we give him one last chance, Chair?

**The CHAIR:** Looks can be deceiving.

**BRAD LAW:** One extra piece of information that I think would be very useful in answering that question is that having reliable monitoring data on koalas at these local population scales in relation to harvesting or fire or whatever the threat may be—if we have that monitoring information, that is what we need to answer that question. We are on the track to be collecting some of that, but it is more of a long-term venture.

**Mr JUSTIN FIELD:** So more research needs to be done?

**BRAD LAW:** Monitoring.

**GEORGINA KELLY:** Mr Field, I would note that of that $193 million, there is $107 million dedicated to protecting and restoring 47,000 hectares of koala habitat and, as I mentioned previously, $43.4 million to support further koala research, which includes monitoring and the development of the statewide baseline by 2025.

**Mr JUSTIN FIELD:** On that $107 million—I think that is a good point—has the department done any work on prioritising where that money should be spent and what areas in particular should be targeted for protection?

**GEORGINA KELLY:** I will take that question on notice, thank you, Mr Field.

**NICK MILHAM:** I have one further comment. I appreciate you want to move on, Chair. I think what Dr Law's research has indicated is that whatever the various threats are—and there is a wide range of threats to koalas—under the selective harvesting practices that can be conducted on the North Coast under the Coastal IFOA, those practices are not making koalas worse off.

**Mr JUSTIN FIELD:** Yes, I think that is established.

**NICK MILHAM:** We're not in the position to answer a question about whether it makes them better off. But it's not making them worse off.

**Mr JUSTIN FIELD:** Understood.

**The Hon. MICK VEITCH:** I'm not sure who is responsible for this, and I would suggest you take it on notice, but on page 16 of the whole-of-government submission—for the sake of tidying up because the submission was lodged last year and we have now moved on a fair way—talks about "Current and upcoming reviews include". On reading it, I would suggest that maybe some of these have now concluded. Would it be possible to get an update from the Government on where those reviews are up to? For instance:

- Remake of the Forestry Regulation – due for staged repeal on 1 September 2021—

we are past that date—

- Western IFOA reviews – due to commence in 2021

…

- 12-month health check of the Coastal IFOA, commencing in mid-2021 ...

Can you update that information for the sake of putting together our report? I'm not sure who takes that on board on behalf of the whole of government, but if someone could that would be nice. I might look at Mr Orr.

**STEVE ORR:** We will ensure that you get a coordinated response, Mr Veitch.

**The Hon. MICK VEITCH:** Good on you. Thank you.

**The CHAIR:** While we are looking at the submission, I will pick up on something on the same page about industry advisory groups. We heard very early on from stakeholders that they would like to see some sort of industry council set up. I note that these were established in 2012. How often do these advisory groups meet, or do they even meet anymore? Does anyone know?

**NICK MILHAM:** If I could query, or clarify, whether you mean the Forest Industries Taskforce, which was then transformed into the Softwood Industry Advisory Group and the Hardwood Industry Advisory Group.

**The CHAIR:** How often do they meet?

**NICK MILHAM:** They are advisory groups to the Minister, established by the Minister and for the Minister's consultation purposes. We've had several changes of Minister in the recent period, and those groups have not met since—sorry, I would probably need to take on notice exactly when they last met, but I think it might have been in early 2021. They were being convened informally for consultation purposes in relation to the impact of the 2019-20 bushfires on the industry and then the best forms of recovery support that the Government could provide. They were also used—again, without being formally convened but as consultation mechanisms—in relation to COVID, and particularly the potential impacts on vehicle movements and staff resources.

**The CHAIR:** I'm getting a sense that they're not really functioning consistently; they're being called up sporadically to have a chat to the Minister when an issue arises. I think what the industry is looking for is something more longstanding, permanent and continuing. Are the minutes or agendas of those industry advisory groups publicised like others? We have with the recreational and commercial fishing groups. Their minutes are published on their websites. Is that done with these two groups?

**NICK MILHAM:** No. These are informal advisory groups that our former Minister, Deputy Premier Barilaro, established. They're not in the same form as those. They, in fact, I think, may well be statutory committees, those other ones that you're referring to. These are informal groups the Minister has established for his own purposes. Our subsequent Ministers have—they need to make their own decisions about the consultation forums that they wish to have. As it turns out, our current Minister has only recently made a decision in relation to recalling the softwood and hardwood industry advisory groups in the near future. But when those meetings will actually be hasn't been passed on to the industry as yet in terms of setting up arrangements.

**The Hon. SCOTT BARRETT:** I have more questions about sustainable farm forestry and, essentially, how do we get more people involved in it. I understand the codes were one way to provide that ongoing certainty. Are we working on any other programs to attract more people in it? Are other people, other jurisdictions offering incentives to get more of a private estate?

**ADAM TYNDALL:** Thanks for the question. I think a couple of things to stress to begin with. It's up to the individual farmer to make their decisions in terms of their long-term planning. I think a couple of things to note. Both northern America and northern Europe agroforestry or farm forestry is much more a central part of how people do business on their farms. So they combine agriculture and forestry day-to-day in terms of how they're doing their planning. That also enables them to diversify their income. So, if there's a drop in commodity prices for, say, graziers or cropping, they have an alternative revenue stream as well.

Internationally, there are a couple of programs which have been really successful in combining incentives to get people to manage their forests more effectively. The USDA runs a forest stewardship program. There's a similar sort of program in northern Europe. They combine both incentives to increase the health and condition of those forests. So you improve productivity but also environmental outcomes. That was one of the key recommendations that was made by Professor Vanclay when PNF codes first came into practice, that we should consider incentive programs to help bridge that gap between managing a crop that doesn't come to fruition for 40 to 50 years, compared to other forms of agriculture which have greater liquidity. I think our interest will be to get farmers to think about managing their forests in the long term, to produce both protections for the environment but also productive outcomes for industry.

**The Hon. MICK VEITCH:** "USDA"—I think Hansard would love it if you could just tell us what that stands for. United States Department of Agriculture—is that correct?

**ADAM TYNDALL:** That's correct, yes. I'm happy to provide on notice some of their papers in terms of the guidelines that they have.

**The Hon. MICK VEITCH:** Can I follow on from Mr Barrett's question? Is it not true that a part of this revolves in New South Wales around the extension services provided by LOS? In that light, just what are we doing to assist farms with extension services in the PNF space, particularly in light of the new codes?

**ADAM TYNDALL:** Happy to take that. We inherited the approvals functions in 2018. Every year since we've had that function, we've run extension programs with local farmers. We ran a webinar series last year, in the wake of COVID, that was attended by over 300 farmers. We've run a couple of extension programs around significant events. In lieu of the bushfires in 2019-20, we ran a series of workshops on controlling erosion and increasing natural vegetation and ground cover in the regions. We've also run or about to run, on the back of the floods, a similar sort of program. We've collaborated with the Soil Knowledge Network and run some webinars on controlling erosion and managing forests that have been impacted by the floods. We've run some webinar series on those. We're looking to go and do on-ground extension around that as well. In terms of the new codes of practice, we've run a series of workshops online initially. We will be going to the Redgum and North Coast to make sure that people understand what their obligations are under the new codes of practice. Before those codes of practice came into effect we wrote to each and every landholder in New South Wales who has a PNF plan and made it clear to them that there was a new rule set and to get in contact with us if they needed assistance implementing that rule set.

**The Hon. MICK VEITCH:** Did you increase the resources for your extension services? In light of the new codes have you ramped up, or geared up further than would be normal?

**STEVE ORR:** If you go back to the NRC report, Mr Veitch, there were four key themes within the NRC report. One was about option of the codes; there was a series of funding matters for both LLS and the NRC; there was some further commentary about the way in which code should be revised into the future; and, finally, there was a recommendation regarding an MOU between EPA and LLS, which we are working on. In terms of budget, we are awaiting the outcomes of the budget process for—

**The Hon. MICK VEITCH:** As we all are.

**STEVE ORR:** —2023, Mr Veitch.

**NICK MILHAM:** And DPI is working collaboratively with Local Land Services, as I mentioned earlier, in relation to measures to try to promote private investment, on-farm investment in plantation forestry and consideration of the potential use or development of their native forests for PNF. We are participating in field days and those types of things, particularly regarding our plantation regulatory functions and the opportunities offered to landholders relating to undertaking plantation investment. As I mentioned earlier, also development of resources, such as a carbon guide and those types of materials that would help that type of investment decision. Further to one of the questions that Mr Field asked earlier about our focus in relation to plantation development, it is very clearly trying to encourage plantation development on private land. There is a lot more land in private hands than there is in government hands. So we certainly do have a very clear focus on trying to promote and encourage forestry as a consideration when landholders are determining how to make the best use of that asset.

**The Hon. MICK VEITCH:** Mr Orr or Dr Tyndall, just how important are extension services in the PNF space? You are going through an exercise of consultation at the moment. Do you actually stop and evaluate to see whether it is effective? There are two parts to my question: how important are extension services in this space and do we evaluate them from time to time to see that we are getting it right?

**ADAM TYNDALL:** I am happy to answer that. I am working from memory, but we did an evaluation process after the most recent extension service and webinars and on-field demonstrations that we did. That research found that about 82 per cent of the attendees thought that they had a better knowledge of how to manage their forests in the long term. In short, the answer to your question is it's really critical for both LLS—I understand the EPA will be in the following session—us to get out on ground and to be providing people with information on how to improve their outcomes on farm and on ground. So I can't overemphasise the need for us to do that.

**The CHAIR:** Can I pick up on your last comment, Mr Milham, about trying to increase private plantations? You have this goal of a 10 per cent increase by 2030. Do you have a set of milestone between now and 2030 where you say we should be at 2 per cent or 3 per cent or 4 per cent increase at this date? And what else are you doing besides turning up to a couple of shows—I am being a bit facetious—and talking to private landholders? Are you confident that you will get that 10 per cent increase purely through that private landholder investment or are you considering dipping your toe into State-owned plantation as well?

**NICK MILHAM:** There is public funding, as I mentioned before, being provided—equity funding being provided to the Forestry Corporation in relation to expanding their plantation estate. That was provided some years ago. But questions in relation to the corporations' strategy relating to its plantation estate should be best addressed to it. I understand they will be here later on today.

**The CHAIR:** We have already had them. Do you have a figure on what equity funding you provided? Do you know what the figure was?

**NICK MILHAM:** I should know that offhand, but apologies.

**The CHAIR:** That's all right.

**NICK MILHAM:** I shall take that on notice and come back to you with that number. I used to know it. It is one of those things that has slipped out of my head. In relation to the target, we have adopted that target as a New South Wales target in response—not just in response—in coordination with the Commonwealth target, the billion trees announcement from a year or so ago. We also see it as an essential part of meeting the challenge of increasing demand in the community for timber. We are pretty confident that with what we see in relation to the improving economic opportunities arising from plantation forestry that this enhanced extension effort, in collaboration with Local Land Services, and the provision of the type of resources that will help farmers and other landholders make better informed decisions about the opportunities that plantation forestry offers them, that we will see a significant increase in the plantation area.

**The CHAIR:** Going back to the first part of my question. Do you have a set of milestones that you are going to tick off as you get towards 2030, where you can say, "We are" or "we are not on track" or "We need to make some adjustments to recalibrate" or "We might be ahead of ourselves and can push for a 15 per cent increase or a 20 per cent increase"?

**NICK MILHAM:** We have not set ourselves a sliding scale between now and 2030, but we are monitoring it on an annual basis when we get our updated figures to see what is happening in the plantation estate. We have only set this target in the last 12 months, as part of the department's new strategic plan. We have just launched into that target. We will certainly be paying close attention to how we are going over the next year or so and seeing whether or not the initiatives that are in place are starting to have an effect.

**The CHAIR:** Just wrapping that all up, that 10 per cent increase is on plantation size and does not take into consideration innovation and efficiencies that we gain through technology. We heard from some witnesses today that technology has improved and they are starting to be able to get a little bit more out of logs that historically they would not have. That 10 per cent does not take into account those efficiency gains through technology, does it?

**NICK MILHAM:** No. They would then be on top of the actual area gain. We are aiming for a 10 per cent increase in the plantable area of plantation. If there are other efficiency gains and productivity gains arising from improved use of the products of that plantation area, then that is an additional benefit.

**The Hon. SCOTT BARRETT:** Speaking of efficiency gains, we have talked a bit about research and innovation and looking at better ways to use the resource. We heard earlier that probably the private sector was best placed to do that. The Forest Industries Innovation Fund seems to be a good way for Government to support that. What are some of the wins we have got out of that? What are some of the projects and advances we have got from that fund?

**NICK MILHAM:** That fund, which was established in 2018, was a $34 million investment since that time. I can only talk in general terms because most of the projects that have been funded through that process, under that fund, are commercial in confidence. We have seen investments in technology to improve milling efficiency—in other words, getting more commercial product from a sawlog than you would have got previously. We have seen investments in the use of mill residues: Turning a waste into an actual valuable product for them, either in terms of a saleable product or in energy generation, to reduce their milling costs. They are just some examples of the types of things that we have seen develop through loans under that fund over the last four years.

**Mr JUSTIN FIELD:** Sorry, are they grants or is that knowledge that is shareable across industry?

**NICK MILHAM:** They are loans, so the Government will get its capital back over time. They will be repaid.

**Mr JUSTIN FIELD:** To those individual businesses? Or is this technology that is developed that is able to be shared between businesses?

**NICK MILHAM:** The loans are to individual businesses to undertake investments, which they are sharing in, so in their own operations, but the types of technologies that we have seen being adopted and put in place through that fund are not secret. They are technologies that the industry is aware of, and what we are seeing is effective demonstration of the use of those technologies in practical operations. Other businesses that are similar can certainly look over the fence and determine whether or not that is an investment they would also like to make.

**The CHAIR:** I am just looking at the submission that says it was $34 million over four years, but you said that it is going to remain open. We are sort of at that four-year mark now and you have only spent $11.3 million. That was in May last year. Is it the intention that you will keep going until you spend that $34 million or is there an intention to keep rolling this fund over?

**NICK MILHAM:** I can update those figures.

**The CHAIR:** That would be good.

**NICK MILHAM:** As of Friday, we have already committed about $20.9 million and there are a number of further applications that have come in. We have actually had six further applications come in over the last couple of weeks which are currently being processed, which would actually fully exhaust that fund if those applications are all approved.

**The Hon. MICK VEITCH:** What is the time frame for repayment?

**NICK MILHAM:** They are 20-year loans. They are managed through the Rural Assistance Authority in the same way that they administer the Farm Innovation Fund.

**The Hon. MICK VEITCH:** Now that we have mentioned the RAA, I should just declare I am a former director of the RAA.

**Mr JUSTIN FIELD:** I just had some questions about the PNF, if I could. Has any work been done to estimate the likely yield from the private native forestry estate as a result of the changes to the code?

**ADAM TYNDALL:** Not at a site scale or a landscape scale. One of the key recommendations of NRC's report, which is supported by the Minister for Agriculture, is that we build a forest management improvement program that has an MER framework for PNF. I would imagine some consideration of both the condition of forests at a scale and the relative impact of PNF will be part of that program.

**Mr JUSTIN FIELD:** I just mean yield. You are hoping to get some more timber out of the private estate, right? Do you have any targets in mind?

**ADAM TYNDALL:** There are no specific targets, Mr Field. I think in particular, in contrast to State forests, it is up to individual landholders to decide when they are harvesting and the intensity of that harvesting and the extent of that harvesting. As you can imagine with 130,000 farmers across New South Wales, they make decisions for all sorts of reasons. Some of those decide to combine forestry with their agriculture and cropping, others do not, but at the end of the day our job is to provide them with a framework and codes of practice that are easier to use that improve outcomes, but the decision is ultimately theirs.

**Mr JUSTIN FIELD:** I want to clarify some of the areas of confusion now that the codes are in place. There are some areas of core koala habitat under the various KPoMs which have existing PNF approvals on them which are being grandfathered through. There is a lot of different information out there. I think you have now said publicly 58 PNF plans cover about 500 hectares. When we last spoke, we had a bit of a discussion. Do you just want to clarify? Is it your position that the grandfathered through areas of PNF approvals cover just 500 hectares?

**ADAM TYNDALL:** That "no less than 500 hectares", Mr Field—so in terms of that attachment, Appendix D, which is the mapping that is attached to the codes of practice, the initial reference in the NRC's report was 6,000 hectares. Both the agriculture Minister and the environment Minister agreed to include some additional areas that were, strictly speaking, defined as primary and preferred habitat.

**Mr JUSTIN FIELD:** This was because of the different definitions in the various KPoMs, right?

**ADAM TYNDALL:** That's right, the approved KPoMs that are in place. Of that 10,000-odd hectares, there are 58 plans in place that are existing PNF plans that have a transitional arrangement. That covers less than 500 hectares. In relative terms, those plans are relatively small in size, so less than 10 hectares each on average.

**Mr JUSTIN FIELD:** You've picked up a broader area. When you consider that broader area, it's still only 58 plans—no more than 500 hectares. What about dual consent? How big is the area of private land that might be eligible for private native forestry plans which would be restricted because of current dual consent arrangements? In your 2017 report, you put it as high as 110,000 hectares or something like that.

**ADAM TYNDALL:** I'm not aware of that report. I would have to take that on notice. The analysis that I've seen is limited to northern New South Wales. Obviously there is some variability—

**Mr JUSTIN FIELD:** I think most of it is in northern New South Wales.

**ADAM TYNDALL:** There are forests throughout all of—

**Mr JUSTIN FIELD:** No, I know that, but in terms of where the dual consent is being applied, the hotspots are in northern New South Wales.

**ADAM TYNDALL:** I take your point, yes.

**Mr JUSTIN FIELD:** I might put that on notice if I could.

**STEVE ORR:** Sorry, what are you putting on notice, Mr Field?

**Mr JUSTIN FIELD:** How much private forested land that would be eligible for private native forestry lands is subject to dual consent arrangements, whereby they would need to get approval from the local council at this time or to be able to do private native forestry even if they had a plan. I'm not sure you are going to tell me. But it is the intention of the Government to bring in legislation to correct that.

**STEVE ORR:** That is a matter for government, Mr Field.

**Mr JUSTIN FIELD:** Yes, okay. Can you advise, though, whether legislation is required? Is it the understanding of the department that legislation would be required to do that?

**STEVE ORR:** That's our understanding.

**Mr JUSTIN FIELD:** I have one last question on koalas. There's a recognition that a broader area of private forestry is now subject to the koala prescriptions in the code. But there is concern about the reduction in the tree sizes that have to be retained—from 30 centimetres to 20 centimetres—even though there are more trees that need to be retained. To a degree, some of this falls out of your science, Dr Law. The decision was taken to reduce the retention size in part because the science suggested koalas are okay with smaller trees. That'd be a fair way to put it, would you agree?

**ADAM TYNDALL:** I'm not sure whether I'd characterise it as "the koalas are okay with smaller trees". I think the research shows that they use a range of species. I'm conscious that I'm sitting next to Dr Law who could probably provide some more information.

**Mr JUSTIN FIELD:** Fair enough.

**ADAM TYNDALL:** I'm also conscious that in the next session you have the New South Wales Natural Resources Commission. One of their key findings was what is important in terms of that habitat is the nutritional quality of the trees that are available and not necessarily just the size and diameter of those trees. But Dr Law might be able to add something to that.

**Mr JUSTIN FIELD:** I am happy for Dr Law to do that. But, again, this is the need for analysis. Given the capacity of trees may go from 30 centimetres to 20 centimetres, if you are reducing the retention requirements, the analysis is that if it is good koala habitat, there are a lot of koala trees, with the retention requirements in there and the reduced size, as much as 65 per cent of koala trees within that particular forest area could still be logged and meet the prescriptions of the PNF code. In your view, Dr Law, is that better or worse than the current CIFOA prescriptions? I guess you have looked at these things more closely than anyone else.

**NICK MILHAM:** I might provide a response to that question because it is not purely a question of science; it is a question of, in effect, government policy that has been reflected in those instruments. A landing has been reached in relation to what is in the PNF code and what is in the Coastal IFOA and we are not really in a position to comment on whether or not those landings are appropriate.

**The CHAIR:** I will provide you with an opportunity, if you think there is anything that you think we have missed or misconstrued, to wrap up.

**NICK MILHAM:** I have an answer to one of the questions taken on notice in relation to new plantation plantings and new plantation areas in the last 10 years. Since 2012 we have had 120,000 hectares of additional plantation. I cannot give you a breakdown between softwood and hardwood.

**The Hon. MICK VEITCH:** If you could take that on notice, that would be good—just to break it down.

**NICK MILHAM:** Sorry, I meant that we cannot actually give you a breakdown. Our regulatory database—we are not always provided information on the plantation proponent or what they are going to plant and then whether or not they planted what they said they were going to plant.

**ADAM TYNDALL:** I could offer a quick correction, Chair, if I have time.

**The CHAIR:** Yes, sure.

**ADAM TYNDALL:** I think earlier I quoted 82 per cent of landholders felt that they had a better understanding of forest management. That figure was actually 85 per cent on the back of the engagement that we have done. I am happy to provide that report to the Committee.

**The CHAIR:** I think a few questions were taken on notice. The Committee secretariat will be in touch and you will have 21 days to get back to us. Once again, thank you for coming and helping us to wrap this up. It is much appreciated.

**(The witnesses withdrew.)**

**(Short adjournment)**

**Ms JACQUELEINE MOORE**, Acting CEO, NSW Environment Protection Authority, affirmed and examined

**Ms JACKIE MILES**, Acting Executive Director, Regulatory Policy, Advice and Initiatives, NSW Environment Protection Authority, affirmed and examined

**Professor HUGH DURRANT-WHYTE**, Commissioner, Natural Resources Commission, on former affirmation

**Mr BRYCE WILDE**, Executive Director, Natural Resources Commission, on former affirmation

**The CHAIR:** Welcome back to our last session for our final hearing of the inquiry into the long-term sustainability and future of the timber and forest products industry. Would either agency like to make a short opening statement?

**BRYCE WILDE:** Thank you for the opportunity to address you again. Since we last met in December, the commission has continued to oversee the Forest Monitoring and Improvement Program on behalf of the New South Wales Government and monitoring for the Coastal IFOA on State forests and has also reviewed the private native forestry codes. I noted this morning there was some discussion in this inquiry about the recent Threatened Species Scientific Committee determination on the koala being listed as endangered and the impacts of native forestry upon koalas. I also note that the scientific committee mentioned a range of human activities including timber harvesting as resulting in loss, fragmentation and degradation of koala habitats. However, the committee further detailed the impacts from such human activities as urban expansion, mining and land clearing, noting that clearing for grazing accounted for most of the loss of koala habitat.

Unlike the other activities, the scientific committee did not expand on its rationale for mentioning timber harvesting. The NSW Forest Monitoring and Improvement Program's work to date has found the overall forest extent in the north-east, southern and Eden RFA regions have remained relatively stable on public land, with increases on private land caused by thickening around the edges of existing forest extent. I note these regions do not include western slopes and plains.

Overall, from 1995 to 2018 there has been a 6 per cent increase in forest extent within these RFA regions. Where there were losses in canopy cover, it was largely due to drought and wildfire. Data suggests native forestry operations only accounted for 1.8 per cent of canopy loss in any given year, and this was offset by natural regeneration. Overall in 2018, compared to 1998, when our data started, there has been an increase in canopy cover on State forests of a minor 1.6 per cent—i.e. there hasn't been habitat loss on State forests over that time.

Some of our other research work we've commissioned has shown there is no evidence that selective harvesting has a negative impact upon koalas. The researchers from DPI Forest Science you heard from earlier today found koala density was higher than anticipated and was not reduced by selective harvesting. Koala density was mostly similar between State forest and national park sites. Some species, such as tallowwood and grey gum, have higher nutritional quality than other species, such as blackbutt. Selective harvesting at the treatment sites did not significantly change canopy tree species composition and, therefore, is not expected to impact on nutritional quality of koala feed trees. Tree species composition, not tree size, is the key determinant of koala habitat nutritional quality.

Under the NSW Koala Strategy we will continue to research the impacts of harvesting upon koalas. There are still a lot more questions to be answered. In the evidence we have gathered to date, climate change and changing fire regimes remain the greatest driver and risk to forest ecosystem health. Researchers at the University of Wollongong found the 2019-20 wildfire has increased the fire frequency across coastal forests, both in national parks and State forests. Larger areas of forests will be exposed to a higher frequency and more intense fires under predicted climate change. In other work, the cross-agency and university biodiversity research team developed nearly 450 fauna models based on data collected over 5,700 sites and found that 69 per cent of the 78 threatened fauna species assessed were at risk by 2070 under predicted climate change.

Data-driven decision-making is essential to meet this future challenge and ensure government can continue to meet its commitments for ecologically sustainable forest management. The Forest Monitoring and Improvement Program has delivered critical data for decision-making and this program needs to continue into the future. The recently approved PNF Codes are a good example of regulatory improvement. They shift towards outcomes and the environmental protections are proportional to the risks. They are based upon the latest knowledge and commit to further knowledge-gathering, providing certainty for landholders while also providing mechanisms for review and adaptation. There is still much to learn but we have the systems and plans in place to gather this knowledge and apply it. Thank you.

**The CHAIR:** Thank you. Is there any statement from other witnesses? Given this is the last hearing, we want to try to wrap everything up in a nice, pretty bundle with a bow. I thought we would offer you guys the opportunity to correct anything or update us on anything in terms of your submissions, noting Mr Wilde has just helped provide some clarity on a few things there. I offer the same opportunity to the EPA, drawing your attention to the Committee's South Coast visit.

**The Hon. MICK VEITCH:** Mogo.

**The CHAIR:** In Mogo we heard some testimony that the EPA is quite heavily reliant on citizen science or citizen investigation and reporting. I don't think that would be a mischaracterisation of what we heard, that they do a lot of the heavy lifting in terms of taking photos and GPS locations of where they think forestry operations aren't up to scratch and then send it to you. I guess I seek a response to that statement that you are heavily reliant on non-government people—citizens—in doing a lot of the investigative work regarding forestry noncompliance.

**JACQUELEINE MOORE:** I would certainly say that we welcome the contribution of members of the community and their reporting of matters of concern to them, and we encourage people to share that information with us. We obviously do our own investigations, and we have approximately, I think, at the moment around 350 authorised officers who have the statutory powers and responsibilities to conduct forestry inspections, investigations and compliance work. We are active in that space. Whilst we welcome and use information provided from the community, we also undertake our own analysis, we have our own program of compliance, and we certainly have our own compliance programs and our own officers who carry out that work.

**The CHAIR:** That is why I'm putting it to you, so you have a right of reply. Are the 350 authorised officers solely looking at forestry?

**JACQUELEINE MOORE:** No, they're not.

**The CHAIR:** They're spread across the State and they're spread across the wide range of areas of investigation.

**JACQUELEINE MOORE:** That's correct; that's right.

**The CHAIR:** But you don't have a team specifically dedicated to forestry or specifically dedicated to other known polluters or other known people who need investigation?

**JACQUELEINE MOORE:** In terms of our investigative officers, we do have some specialist investigators who focus on major crime. But the authorised officers would look at a range of areas, including forestry. In addition to those authorised officers, we have environmental experts within the agency and other people with particular expertise who would also be involved in forestry matters.

**The CHAIR:** Is there anything else that you have heard over the course of this inquiry, whether it is through submissions or through evidence at hearings, that you feel like you want to correct, update or clarify for balance?

**JACQUELEINE MOORE:** I think there may have been some suggestion—and I'm not sure of the name of the gentleman—that we were perhaps biased in our approach. I would say that we are obviously not biased in our approach to our compliance activities.

**The Hon. MICK VEITCH:** I want to ask a series of questions to Mr Wilde. At one of our hearings the executive summary of the NRC's final report on the Coastal IFOA was tabled. Recommendation 9 on the very last page states:

> The NSW Government should increase investment in large-scale, regionally coordinated pest and weed control on state forests to address risks from incursion and predation.

I have pretty much used this inquiry as a forum to highlight the issues around weeds and pests in New South Wales and their negative impact, in a number of ways, on the environment as well as their impact on forest management particularly. For the sake of the Committee, can you go through what drew the NRC to make that recommendation? What are you looking for when you say, "increase investment in large-scale, regionally coordinated pest and weed control on state forests"? The reason I ask that is there are already regional weed and pest committees. Can you elaborate on how you got to that recommendation and why?

**BRYCE WILDE:** The recommendation that you are referring to is from a Cabinet-in-confidence document. I can talk more broadly about pest and weed management rather than the specifics of that one, if you like.

**The Hon. MICK VEITCH:** You can go more broadly. As long as I get on record that it's a problem and we need money spent on it, I'll be happy.

**BRYCE WILDE:** The Natural Resources Commission, back in 2014, first did a review into weed management in New South Wales and then followed up in 2016 with a statewide review into pest animal management in New South Wales. We've also had some oversight function, if you like, of catchment management authorities and Local Land Services in their performance of pest and weed management duties for some time, and been looking more broadly at natural resource management across whole-of-government and private landholders. This is an area which is a shared responsibility and a shared problem. Too often when there are shared problems there is not enough action. Sometimes some landholders, whether they are public or private, carry more of the burden than others both in impacts and in bearing the costs. The costs of weeds are quite significant and stretch into the billions and warrant significant attention.

Historically, the level of effort on some public land managers has been insufficient when it comes to pest animals because, quite frankly, wild dogs and foxes do not eat trees, so there is not a significant impact upon the business there. There have been increases of effort and attention and resourcing from public land managers, both State forest and national parks, in this area. It is an area which I still think warrants much, much more resourcing and attention. There are statewide regional pest animal and weed management committees. The question would be how well resourced they are, what priorities they are addressing and whether those priorities are actually the primary priorities from an ecological perspective as well as from an economic and social perspective. Quite often the impact has been driven by whatever the issues may be of the day, rather than—the issues should be informed by priority, data and risk-based assessments. However, we are here about forestry, rather than pests and weeds, so I will leave it at that.

**The Hon. MICK VEITCH:** Just on that, in Tumut we heard from the softwood working group about their own assessment or analysis that they had undertaken. Blackberry growth on its own in the softwood plantations was a productivity hit of $2,500 per hectare per year. If you look across the 30-year lifespan of a softwood plantation, I would suggest that is a pretty substantial monetary impact for the State Government to absorb just from one weed, that being blackberries. There are others. So I think this Committee has quite rightly been looking at a range of—camphor laurel on the North Coast was raised with us as an issue as a part of the PNF. I am glad you have put those comments on the record for me. Can I just go to the 2014 report that you were talking about, the NRC report? Have we updated the figures at all on what the impact is to the State GSP? Was it $2.5 billion? Is that your number? It might be someone else's number.

**BRYCE WILDE:** Back in 2014 our number was—from memory, $1.4 billion was the economic impact assessment from weeds upon the State GDP. It might have been 1.2. That is my recall from eight years ago.[†]

**The Hon. MICK VEITCH:** Excellent, thank you. Do you think it is timely to have that revisited?

**BRYCE WILDE:** Yes.

**The Hon. MICK VEITCH:** For the record, I wrote to the relevant Minister, who said that he did not think it was timely. But my view is that those figures do need updating. That body of work, which was really good, and the 2016 report—it does impact forestry as well as the whole of the State. I think, personally, that we should be asking your organisation to go away and revisit that work to at least contemporise it.

**BRYCE WILDE:** We would welcome that.

**Mr JUSTIN FIELD:** Perhaps on that Cabinet-in-confidence report quickly—and I am not asking you to go into it. I think we might have already tried to ask questions about this the first time around. But just to be clear, this was a report you were commissioned to do to look at, post the fires, whether or not the controls—or what particular controls or additional prescriptions might be suitable in State forest harvesting as a result of the impact of the fires. Is that correct? Are you able to be clear about that?

**BRYCE WILDE:** Yes.

**Mr JUSTIN FIELD:** And you provided that report to the Government in the middle of 2021. Are you able to confirm that?

**BRYCE WILDE:** Yes.

**Mr JUSTIN FIELD:** So we are at about nine months later and there has not been a response at this point from the Government, nor have they made that report publicly available. Can you confirm that?

**BRYCE WILDE:** Yes.

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[†] In correspondence to the committee received on 20 June 2022, Mr Bryce Wilde, Executive Director, Natural Resources Commission, clarified his evidence.

**Mr JUSTIN FIELD:** Thank you. Obviously, the report is in the public realm, but I'm not asking you to comment on the report as such, but I would just speak in generalities. I appreciate your comments re koalas, but I wanted to go to one of the other aspects of concern about the impacts on biodiversity of the current prescriptions in the CIFOA, particularly post-fires. There's concerns that there's been a huge loss of hollow-bearing trees as a result of the fires and that the combined impact of the fires and the current prescriptions in the CIFOA is having a pretty substantial impact on hollow-bearing trees. Without going into the information in the report, can you provide anything to the Committee that speaks to that issue? We're talking about the future of the timber industry. I'm concerned that it is having an impact, not just on koalas but on those many hollow-dependent species out there. So I'm just asking if you can provide any evidence to the Committee to that effect.

**BRYCE WILDE:** Certainly, if I'm talking about other work that we've initiated under the Forest Monitoring and Improvement Program, which address issues of hollow-bearing trees and key fauna species. We've currently commissioned ANU, led by Professor Phil Gibbons, to do modelling of the hollow-bearing-tree resource under Coastal IFOA conditions. That work is now currently under review. So, shortly, that work will be released and will be made publicly available—which is a looking at the modelling of what resource there will be for hollow-bearing trees into the future under certain prescriptions of the Coastal IFOA. It doesn't look at the landscape level. It doesn't look at post-fire level. It looks at these prescriptions, if they continued in isolation, what is the model projection.

What does that mean? It comes through the importance of having recruitment trees. If you look at it in relation to fires—when there is a massive fire event which happens, like in 2019, 2020, where there were, across State forests and national parks, significant widespread areas of intense fire, then there is also significant impacts upon hollow-bearing trees. So then the question is "Where is the future hollow-bearing-tree resource coming from, given at least 120 years to form a hollow?" We're doing work on that respect. We've also done work, as I mentioned before, on fauna species and those 69 per cent of threatened species which were modelled to be at risk of climate change up to 2070. The group which are more at risk in that study are hollow-dependent fauna, as well as an odd frog or two. But it does stand out to be the hollow-dependent fauna.

**Mr JUSTIN FIELD:** Correct me if I'm wrong, but it was the recruitment tree aspects that were removed from CIFOA or substantially changed when it was reviewed last, wasn't it. That was one aspect that was changed in the CIFOA when it was reviewed in, what, 2018. So this would be sort of a revisiting of some of those things that we had originally, and they were—

**BRYCE WILDE:** In the Coastal IFOA there were some changes made. Instead of having specific protections, there was also more landscape-level protections for hollow-bearing trees. It was also very important to remember that the Coastal IFOA is a multi-landscape-scale protection and recognising that, in regulating Coastal IFOA harvesting, you're also recognising that, on average, there's 50 per cent of that landscape already protected and that the Coastal IFOA introduced wildlife tree clumps and wildlife habitat clumps and tree retention clumps, which are also meant to be permanent protections for areas. There's those other landscape-scale protections to offset some of those specific protections that you're referring to.

**Mr JUSTIN FIELD:** Thank you. There's been a bit of discussion around the wood supply assumptions and sustainable yield and then the independent analysis, which raises some questions about whether or not it's wholly accurate. There wasn't a lot of on-field work. This has come up in some discussions. I noted that, in one of your reports, you've identified that Indufor, I think it is, is examining an extensive dataset of wood supply and related factors over 17 years, 2003 to 2019. It's due to report relatively soon. When would we be likely to see that? I think it would be of real interest to this inquiry.

**BRYCE WILDE:** Yes, it is currently under review. We will shortly be sharing that with the steering committee for the Forest Monitoring Improvement Program. Then as soon as that has been reviewed, I will undertake to write to the Chair and share that report with this inquiry Committee. At the moment, over that time period—and it is still subject to expert review, technical working groups, et cetera—but it does show a 25 per cent decrease in wood supply since the 1990s through to 2018 on the data that I have seen. And that is across all, and most of that is driven by a loss of pulp, but there is a 15 per cent decrease in high-quality saw log.

**Mr JUSTIN FIELD:** What is driving that, if I can get a preview of the report?

**BRYCE WILDE:** Some of these issues were addressed by the Forestry Corporation this morning, which is talking about government decisions being made, buybacks, allocations, availability. They are much better placed to describe all of that.

**Mr JUSTIN FIELD:** I have been going back and looking at some of their yield assessments. There was that buyback of the 50,000 cubes from Boral in 2014. That seemed to be based on some modelling that had shown that there was going to be a pretty substantial drop-off, particularly in high-quality sawlogs, blackbutt, on the

North Coast. But that 50,000 cubes does not really account for this sort of flattening of the sustainable yield models that I am seeing now. You have done a lot of work in this space and obviously you have seen some of this analysis. Can you provide any insight into where the timber is being obtained in the forest to flatten out these wood supply challenges that Forestry Corporation has faced? I don't know if I am articulating that very well. I am just trying to make sense of these numbers. This report will be very interesting to see, but just on what is available on the public record at the moment, I can't quite make them all stack up.

**BRYCE WILDE:** Hopefully when we finalise this report we will answer some of your questions, Mr Field. At the moment there is a clear trend of reduction, as I said. It is dependent upon a range of factors—market forces, government policy decisions, regulatory impacts, threatened species protections, climatic factors, floods, impacts with supply—then accessing the plantation resource has provided a slight buffer to it. It's a complex story. It's not one which you can have a single driver to.

**Mr JUSTIN FIELD:** Chair, I have some questions for the EPA, but I am happy to go around and start again.

**The CHAIR:** I am looking for other members if they want to ask questions.

**The Hon. SCOTT BARRETT:** Coming back to the biosecurity, and not trying to downplay the fact that we do need to do more in our biosecurity space, I know blackberries has come up a number of times in this hearing. How much of a biosecurity risk are blackberries posing within the Forestry Corporation estate, given if they do everything to stop that spreading into other areas, yes, it might be an issue for Forestry Corporation but they are still meeting their biosecurity obligation in stopping that spreading, right?

**BRYCE WILDE:** That's correct, Mr Barrett, yes.

**The Hon. SCOTT BARRETT:** The biosecurity risk of the blackberries as a specific example is not probably at the top of the list?

**BRYCE WILDE:** Correct.

**The Hon. SCOTT BARRETT:** With the koala information you mentioned before, the scientific community did not go into much detail about forestry. Where did they rank it as far as the impacts on koala population?

**BRYCE WILDE:** In their determination they didn't necessarily have a clear ranking. But if you look at it in relation to word count, there were two words: timber harvesting. There were then sentences on each of the other human use activities, including agricultural clearing, mining, et cetera. Then there were paragraphs about climate change and wildfire.

**The Hon. SCOTT BARRETT:** I am all right there for a second.

**The CHAIR:** Can I pick up on your first question? You said that blackberry was not at the top of the list in terms of biosecurity. What is at the top of the list? And can you confirm that Forestry is managing its obligations in terms of stopping blackberry spreading onto private property? We heard testimony in Tumut that said otherwise.

**BRYCE WILDE:** In relation to the question about blackberries, going back to when we did that 2014 work, we talked to producers in the Tumut region about this issue and this issue did come up. We talked to DPI and others who were doing research and prioritisation on this, based upon risk assessments and blackberries did not come up to be a priority risk. What is the current priority risk? I can't tell you. We haven't been doing that work recently. What I can say is, there needs to be clarity on what those priorities are and there should be an open and transparent scientifically based risk assessment at the regional level on what the key risks are. It should also not just be at the regional level, it should also look at our borders and entry and exit points. There is a range of things there which, again, if we weren't talking about forestry, I would be very keen to speak further about.

**The Hon. MICK VEITCH:** That is all very good for the report, thank you. So not just blackberries, but did you look at weeds as a contributor to fuel load for bushfires?

**BRYCE WILDE:** No.

**The Hon. MICK VEITCH:** Would they be a contributor to the fuel load for bushfires? I am thinking about camphor laurel, for instance.

**BRYCE WILDE:** Potentially. It is just not an area which I have looked into personally.

**The Hon. MICK VEITCH:** I have a couple of questions for the EPA. I would hate to see you come here and not get a question. It would be very good if the EPA could just advise your compliance role for PNF, particularly the new codes. If you can explain how your role works in that paradigm, that arrangement?

**JACQUELEINE MOORE:** Sure. We have responsibility for regulating compliance with the codes and with the PNF plans. We work closely with Local Land Services to ensure that we have the information that we need to undertake that role. I think you might have already heard earlier today that we are putting in place a memorandum of understanding with Local Land Services. That will set out our respective responsibilities and how we intend to cooperate in terms of the EPA, also inputting into things like development of protocols and guidelines. That MOU will also cover what kind of information-sharing arrangements we have in place. We will be working very closely with them to ensure that we are giving consistent messaging to stakeholders and landholders.

**The Hon. MICK VEITCH:** We had before us a bit earlier today Dr Kelly from the Department of Planning and Environment. We explored mapping a little bit. How important is the mapping that is currently available to your compliance role? One, for PNF; two, much broader for State forestry?

**JACQUELEINE MOORE:** We certainly rely on mapping. I might defer to Jackie to give you a bit more detail around that. But it certainly is one of the inputs that is very important for us.

**JACKIE MILES:** That has been one of the most beneficial changes in both the Coastal IFOA and the new PNF codes. Having a map enables us to know exactly what rule set applies at what location. It makes it easier for landholders or Forestry Corp to comply with the rules, but also for us to assess compliance. It provides a degree of certainty around our regulatory program. It can be a really effective tool around how we risk assess operations and prioritise our regulatory effort, including how we engage with landholders to help them comply, as well as when we do post logging inspections to assess compliance. There are huge amounts of technology advances that are going on at the moment that can help inform our compliance programs of both the maps that are included in these regulatory instruments but also satellite imagery that will help us understand where different operations are occurring.

**The Hon. MICK VEITCH:** How heavily do you rely on those maps?

**JACKIE MILES:** We are very reliant on those maps in terms of understanding what rules apply where. In terms of satellite imagery, up until now we have been quite reliant on that in terms of understanding where private native forestry is occurring. One of the good benefits of the new PNF codes is that we will also be getting notifications from landholders prior to them commencing harvesting. The satellite imagery on top of that gives us a very good picture to inform our compliance program.

**The Hon. MICK VEITCH:** Is that one of the main changes for your agency in the new PNF arrangements where landholders will now advise before they start the process of harvesting as opposed to previously?

**JACKIE MILES:** Yes, that is such a beneficial change. It enables both Local Land Services and the EPA to understand 30 days in advance of where harvesting operations will occur, and working together we can make sure that we are providing the support up-front to landholders to make sure they are in a position to understand the new rules but also to comply with them.

**The Hon. MICK VEITCH:** Does that mean you then go on site to speak with the landholder and LLS and sort of ground-truth the map information before they start?

**JACQUELEINE MOORE:** We may do that. We may contact a landholder; we may not go on site. But that is certainly an option that we could be involved in, and certainly if we have the notification 30 days in advance, that gives us the opportunity to go out on site before any operations commence.

**Mr JUSTIN FIELD:** To confirm that, if I could, this is part of the MOU, right? You have an assurance you will get that 30-day notice? I think under the code, that is provided to LLS. Have you reached that agreement with LLS that it will come straight to you? They have been down this track for a while.

**JACQUELEINE MOORE:** The MOU is yet to be signed, but both agencies are very committed to putting that in place as soon as we can.

**The Hon. MICK VEITCH:** I know Mr Field will ask questions about this as well in much more detail. With regard to Forestry Corporation and its compliance, how regularly do you meet with Forestry Corporation to discuss in a broad sense, not individual cases, their obligations to comply with the IFOAs and the like before they start?

**JACQUELEINE MOORE:** We have a senior officers group with Forestry Corporation that meets generally every four weeks, once a month, and that is an opportunity for us to both put items on the agenda and talk about issues. In addition to that, every fortnight I have an individual meeting with the CEO of Forestry Corporation NSW as well.

**The Hon. MICK VEITCH:** We could draw from that that Forestry Corporation are fully aware and fully conversant with their obligations?

**JACQUELEINE MOORE:** I cannot speak for what Forestry Corporation are or aren't conversant with, but certainly we are actively engaged with them in talking about their programs and our understanding of their compliance obligations.

**The Hon. MICK VEITCH:** The other way of putting this is that from that process that you have articulated for the Committee, do you draw comfort from that process that Forestry Corporation should be aware of their compliance obligations?

**JACQUELEINE MOORE:** It is certainly an avenue. If they have any doubts or questions they want to raise with us, it is certainly an avenue for them to clarify those with us. That said, we do not always have rich agreement on what might be the best way forward in a matter.

**The Hon. MICK VEITCH:** When Forestry Corporation is—I don't know—breached and that goes through the legal process, at the end of that at those meetings, do you discuss with Forestry Corporation a better way to comply with that process? Do you have a discussion post the event to say—

**JACQUELEINE MOORE:** Like a debrief?

**The Hon. MICK VEITCH:** Yes, that will do—debrief.

**JACQUELEINE MOORE:** We are yet to have one of those, but it is something we could do.

**Mr JUSTIN FIELD:** Thank you for being here, Ms Moore and Ms Miles, and congratulations on your job as Acting CEO. This is probably your last performance in that role, and I look forward to working with the new CEO as well. Your staff have been very available to me in recent years to better understand this; I appreciate that. I have a couple of questions in line with what Mr Veitch was going on with then. How long have you been having those fortnightly CEO meetings?

**JACQUELEINE MOORE:** I have been having those since I have been acting in the role, and I have been acting in the role since January. There might have been the odd occasion we have missed them, but they are scheduled in.

**Mr JUSTIN FIELD:** Do you know how long before that they were happening?

**JACQUELEINE MOORE:** My understanding is that the former CEO would catch up regularly with the CEO of Forestry Corporation, but I cannot talk to the detail of that.

**Mr JUSTIN FIELD:** It is partly on the public record because we do see your compliance activity on the public record. But we don't necessarily have a good handle on the number of complaints that are received. Based on your analysis or your understanding, there does seem to have been an escalation in compliance actions by the EPA since the fires in particular. How would you describe the compliance actions of the EPA and the compliance performance of Forestry Corporation over the past couple of years compared to the historical norm?

**JACQUELEINE MOORE:** I would certainly say that we have dedicated resourcing towards having an active role in forestry compliance, especially post-bushfires. This was something that we have actively engaged in. Forestry Corporation—I think there have been a range of issues. It is on the public record, the activities we have taken, from prosecutions through advisory and warning letters—the whole gamut.

**Mr JUSTIN FIELD:** It would be fair for me to say—maybe you can concur—that there have been more infringement notices, more investigations, more penalties, and I think you even have some prosecutions underway, which is an escalation on the historical norm.

**JACQUELEINE MOORE:** I haven't got the figures for the historical norm.

**Mr JUSTIN FIELD:** Could you provide those? I know it is on the public record. Perhaps this will be a feature of a report that might come from this Committee. It would be good for us to get that sense.

**The Hon. MICK VEITCH:** How far back do you want to go?

**Mr JUSTIN FIELD:** Probably just the past five years, which gives us a bit of a window either side of the fires. How many prosecutions are currently underway?

**JACQUELEINE MOORE:** We basically have the 10 charges before the court in three separate matters. I think they are Wild Cattle Creek, Dampier and Tomerong. In two of those matters, Forestry Corp has pleaded guilty to some of those charges and sentencing has occurred. Judgements are reserved. In the third one, Forestry Corp has pleaded not guilty and a hearing has been set down for December this year.

**Mr JUSTIN FIELD:** There are a number of other investigations that are ongoing. They have not been concluded. Some of them go back quite some time now, don't they?

**JACQUELEINE MOORE:** That's correct, yes.

**Mr JUSTIN FIELD:** Can you give us a sense of how many ongoing investigations there are?

**JACQUELEINE MOORE:** I think there are around 15 current investigations on foot.

**Mr JUSTIN FIELD:** Against Forestry Corporation. How many different State forests would that apply to?

**JACQUELEINE MOORE:** I couldn't tell you the number of State forests. I would have to take that on notice unless you know, Jackie.

**JACKIE MILES:** No, we'll take it on notice.

**Mr JUSTIN FIELD:** It would seem that they don't quite understand their obligations, Mr Veitch. With regard to authorised officers, you indicated that there are 350 authorised officers

**JACQUELEINE MOORE:** Approximately, yes.

**Mr JUSTIN FIELD:** Approximately, across the State. Before the restructure, there was a dedicated—things happen. I just want to get a better understanding of this. I have asked questions around this. I think I'm sharpening up where I'm coming from. How many people were in the dedicated forestry team in the EPA before the restructure?

**JACKIE MILES:** I think it fluctuated anywhere between 30 to 40 dedicated forestry staff. But that included a mix of both policy and technical staff and authorised officers.

**Mr JUSTIN FIELD:** How many of those with that history of dedicated forestry experience are part of the 350 authorised officers who are currently doing this work within the EPA? Do you know? Do you have any sense of it? I am happy for you to take that on notice.

**JACQUELEINE MOORE:** I think we've previously answered how many have left since then. But some of those staff would not be authorised officers. They might have moved into specialist expert roles in the agency.

**Mr JUSTIN FIELD:** I totally understand that. I'm keen to get an understanding of whether or not there has been a diminishing of the knowledge set. There's quite a lot of detail here. It has taken me a few years to get across how the CIFOA operates. It took Bryce less time, but that's unsurprising. There's a frustration in the community that there seems to be a decreased level of knowledge in the field when it comes to being able to identify tree species or what is a hollow, and they seem to be starting from scratch. I am just keen to understand that. From your perspective, do you think that there needs to be a change in the way the EPA does its forestry work to reflect the complexity in this space?

**JACQUELEINE MOORE:** I do not think there necessarily needs to be a change, but we are obviously always keen to improve and make sure that we are using our regulatory functions and powers appropriately and, like all agencies, we are looking at continuous improvement across all of our operations, including in the compliance space.

**JACKIE MILES:** Can I build on that as well. We often also have a technical team and we draw on expertise from across the Department of Planning and Environment or elsewhere as well, including the NRC. So we have a range of experts who assist us in our compliance activities.

**Mr JUSTIN FIELD:** I appreciate that, but when you get a report and someone has to go out in the field and check it, you have to know what you are looking at to start. I am sure there are other complex areas of the EPA's work, but in this space—I am pretty engaged with people on the ground who are doing some of this citizen science work that is feeding back to the EPA—I think it is fair to say there is a bit of frustration there. I know you have a limit to your resourcing, for sure. I understand that. With the MOU, will it be a public document once it is finalised?

**JACQUELEINE MOORE:** I do not think we have had that discussion yet with Local Land Services.

**Mr JUSTIN FIELD:** Do you know if reporting on the actual yield coming out of those forests will be made public?

**JACKIE MILES:** I think that would probably be a discussion we would have to have with Local Land Services. We will be receiving that information as part of the post-harvesting notifications, but it will be a matter for Local Land Services around whether they are going to be publicly disclosing that information.

**Mr JUSTIN FIELD:** When the forestry snapshot gets reported, there is a very substantial gap in PNF. Everything else seems to have a lot of detail and we can draw some conclusions about the state of that forest, but PNF is a big gap. There might be something we can pick up in the recommendations, but I think it serves us all to understand the extent to which the private forestry sector is contributing to wood supply in New South Wales because it certainly has been an area of frustration for some time. On that, do you know when the next forestry snapshot will be published? I think it might be a little late, if I recall.

**JACKIE MILES:** Forest snapshot reports always run a little late because they are reliant on being built after the relevant agencies have finished their annual reporting. We draw on annual report information to populate it. My understanding is that the next one is under development at the moment.

**The Hon. SCOTT BARRETT:** I have a question for the NRC. How does New South Wales compare in the management of our forestry estate with other jurisdictions in the country and around the world?

**BRYCE WILDE:** That is a very good question. It is difficult to answer because in each area there are different forest ecosystems. In relation to how well regulated State forestry is in New South Wales compared to others, it is heavily regulated. Does the Coastal IFOA meet best practice principles? Yes. The best practice principles for native forestry used to have retention forestry, outcomes-based forestry, identifying and focusing on the main risks. Retention forestry is about not what you chop down but what you keep, and the Coastal IFOA delivers that. On the North Coast the intensive harvesting and the selective harvesting is much more carefully managed and in line with the ESFM than some other principles in some other jurisdictions and other silvicultural practices south of New South Wales. If you look at forest research, then other countries are leading the way. Forest research, monitoring and science is an area which we are lacking in. Leaders there are Finland and also New Zealand, both from an industry perspective and from an ecological perspective. In many areas we are very good, but there are areas which we can improve upon.

**Mr JUSTIN FIELD:** I might just follow up if I could, Chair, and then we will give everyone an early mark by a few minutes. The last time you were before us, Mr Wilde, I asked about the forest monitoring program and its resourcing. I'm sure you are waiting to see what's in the budget, but just a question: Have you got any confident certainty around the funding of that program ongoing at this point?

**BRYCE WILDE:** No.

**Mr JUSTIN FIELD:** Okay.

**BRYCE WILDE:** Discussions are continuing but, no, I don't have any certainty.

**Mr JUSTIN FIELD:** Thank you. Thanks Chair.

**The CHAIR:** I might just offer the opportunity here at the end of the hearing if there is anything you think you could have said but haven't said yet, or you want to clarify anything. You might have got some answers back for things that you were going to take on notice.

**The Hon. MICK VEITCH:** Or you might have been misconstrued.

**The CHAIR:** Or misconstrued. This is a final chance to add anything more to the record before we call it.

**JACQUELEINE MOORE:** I'm fine.

**The CHAIR:** Excellent. Thank you very much. You have taken some questions on notice. The Committee secretariat will be in touch and you will have 21 days to get back to us. Thank you once again for coming, not only today but obviously the earlier session as well. It is much appreciated. Thank you very much for your time.

**(The witnesses withdrew.)**

**The Committee adjourned at 16:05.**