REPORT ON PROCEEDINGS BEFORE

PORTFOLIO COMMITTEE NO. 4 - INDUSTRY

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

CORRECTED

Virtual hearing via videoconference on Wednesday, 29 September 2021

The Committee met at 9:30 am

PRESENT

The Hon. Mark Banasiak (Chair)

The Hon. Sam Farraway
Mr Justin Field
The Hon. Taylor Martin
The Hon. Peter Poulos
The Hon. Peter Primrose
The Hon. Mick Veitch (Deputy Chair)

The CHAIR: Welcome to day two of the virtual hearings into the long-term sustainability and future of the timber and forest products industry. Before I commence, I would like to acknowledge the Gadigal people, who are the traditional custodians of the land on which Parliament sits. I also acknowledge the traditional custodians of the various lands on which my colleagues are joining today as well as all people participating in today's hearing. I would like to pay respect to Elders past, present and emerging and extend that respect to all Aboriginal people who may be present today.

Today's hearing is the Committee's second and is being conducted as a fully virtual hearing. This enables the work of the Committee to continue during the COVID-19 pandemic without compromising the health and safety of members, witnesses and staff. As we break new ground with the technology, I would ask for everyone's patience through any technical difficulties we may encounter today. If participants lose their internet connection and are disconnected from the virtual hearing, they are asked to re-join the hearing by using the same link as provided by the Committee secretariat. Today we will be hearing from organisations representing the timber and building industry as well as academics.

Before we commence, I would like to make some brief comments about the procedures for today's hearing. While parliamentary privilege applies to witnesses giving evidence today, it does not apply to what witnesses say outside of their evidence at the virtual hearing. I therefore 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. There may be some questions that a witness could only answer if they had more time or with certain documents to hand. In those circumstances, witnesses are advised that they can take a question on notice and provide an answer within 21 days. Today's proceedings are being streamed live and a transcript will be placed on the Committee's website once it becomes available.

Finally, I will make a few notes on virtual hearing etiquette to minimise disruptions and assist our Hansard reporters. I ask Committee members to clearly identify who their questions are directed to and I ask that everyone please state their name when they begin speaking. Could everyone please mute their microphones when they are not speaking. Please remember to turn your microphones back on when you are getting ready to speak. If you start speaking while muted, please start your question or answer again so it can be recorded in the transcript. Members and witnesses should avoid speaking over each other so we can all be heard clearly. I remind members and witnesses to speak directly into the microphone and to avoid making comments when your head is turned away.

STEPHEN DADD, National General Manager—Building Products Division, Boral, affirmed and examined

ROD CAUST, General Manager—Commercial, Bunnings, affirmed and examined

ADAM MORTON, Category Manager—Timber, Bunnings, affirmed and examined

The CHAIR: I now welcome our first witnesses. Would any of you like to make an opening statement, starting with you, Mr Dadd? Given that we do not have a submission from you, we would love for you to give an opening statement.

Mr DADD: Yes, thank you, Mark. I would like to offer an opening statement if I may. First of all, thanks for the opportunity to appear before the inquiry. As I mentioned, I am the National General Manager for Boral's Building Products Division but I am also a director of Forest and Wood Products Australia, which is one of our rural research and development corporations, and a director of the Australian Forest Products Association [AFPA]. In New South Wales Boral runs a softwood business producing mostly house framing and a hardwood business focused on high-end decorative products. More than 70 per cent of our resource is sourced from plantations and the remaining comes from regrowth State forest. Most of our supply is subject to long-term contracts.

Our customers include the main channels into the domestic building and construction market and some niche customers, and I am very pleased to say that Bunnings is one of our important customers. We employ close to 500 people, mostly in regional centres and mostly in New South Wales. I would point out too that our business has been around for 128 years. You would be familiar with a lot of our timber in the old buildings in Macquarie Street. We did the glulam beams in the Sydney Opera House and we laid the original deck on the Sydney Harbour Bridge, so we know something about sustainability.

There is no question that we have seen some extraordinary changes in the timber supply-and-demand dynamics lately—catastrophic fires in our plantations and our regrowth forests, a COVID-driven collapse in trade, a surge in housing demand and renovations, and also a growing awareness of timber's role in the transition to the circular bioeconomy. In combination with an historical underinvestment in plantations and reductions from the regrowth State forest, we really do face at the moment a chronic shortage of timber which could, if left unchecked, undermine our post-COVID State construction-led recovery. You probably noticed in yesterday's media release from the Housing Industry Association and AFPA that there is talk of a 250,000 house frame deficit building by 2035. That is significant to our economy.

Typically in a situation like this, a market response would rationally see investment and over time a rebalancing of that supply and demand. But for some time now we have seen a market failure in New South Wales, and it is driven by uncertainty and conflict. We have great uncertainty in wood supply. The supply since the fires for many of our mills has been chaotic to say the least. We have uncertainty in plantation investment policy. We have uncertainty in carbon treatment. We have uncertainty in water, land management and environmental policy. In terms of the conflict, the conflict politics which has been present for every day in my 20 years in the industry is becoming exhausting. To get past this conflict and investment uncertainty we need to treat our plantations like any other agricultural activity and we also need to use science, not ideology, to show that our tightly managed mixed-use State forests are not mutually exclusive to biodiversity, carbon abatement and other beneficial land uses.

I find it very unsettling that there is constant challenge to the future of our hardwood State forests. If through neglect or policy we follow the path of Victoria and Western Australia, we seriously face an enormous loss of regional employment. We face an irreversible vacuum of assets and skills to fight fires into the future and protect communities. We face the loss of unique expertise in forest management, including the reawakening of Indigenous forestry practices. We also change forever the experience of tens of millions of recreational visitations each year to our State forests and we place enormous pressure on tropical old-growth forests through imports. We also stand to lose so many emerging opportunities to grow new industries as we transition to the bioeconomy. There is some really exciting stuff coming through in the space of bioenergy, bioplastics et cetera. I guess finally we turn our back on the really positive contribution that our forests and our forest industries can have on major global environmental challenges.

In summary, if I may, from a Boral and an industry perspective, we would like to see a commitment to more trees in the ground, in line with our industry billion-tree policy. We would like to see policy stability in New South Wales to give us an investment horizon, particularly in hardwood where government departments seem to be at loggerheads in how to manage wood supply—particularly since the fires. Finally, we would like to see ongoing support for the State forest as a permanent mixed-use asset for regrowth fibre, recreation and biodiversity. There is no simple transition to plantations and there will always be a role for a well-managed, sustainably managed State forest. Thank you.

The CHAIR: Mr Morton or Mr Caust, would you like to make a statement on behalf of Bunnings?

Mr CAUST: Yes please, Chair. On behalf of Mr Morton and of course Bunnings, thank you for the opportunity to appear before the Committee this morning. By way of introduction, Bunnings has a rich history, operating in Australia since 1886. We currently employ approximately 48,000 people across Australia, across some 338 trading locations. Over time we have evolved from a small family-owned timber mill to becoming a leading retailer of home improvement and lifestyle products. Our business is a wholly-owned subsidiary of the ASX-listed Wesfarmers.

We have support offices and distribution centres across Australia to support our business operations and we are proud of our strong presence in rural and regional Australia where we employ a significant number of team members. Bunnings sources timber and timber products for retail and commercial customers from areas across Australia, including New South Wales. Bunnings' policy has always accepted timber certified under the Forest Stewardship Council [FSC] and the Programme for the Endorsement of Forest Certification [PEFC] and Responsible Wood, along with low-risk plantation and product with demonstrated progress to certified responsibly sourced. We continue to source timber in New South Wales that meets these requirements.

Between the COVID-19 pandemic and the legacy of the Black Summer bushfires, the timber industry has come under significant pressure over the past few years due to demand exceeding available supply. Restrictions imposed due to COVID across New South Wales, Victoria and Tasmania, while necessary, have impacted the supply of materials, and shortages in structural timber have been exacerbated by increased demand from the building and housing sector. These shortages and impacts have been felt industry-wide, limiting the operations and capacity of all timber suppliers and retailers.

Like all Australian businesses, Bunnings has been directly impacted by the ongoing COVID-19 pandemic. Throughout the pandemic, Bunnings has worked with all levels of government to ensure ready access to essential and emergency hardware items to keep Australians' homes safe and secure while also protecting the health and safety of our team, customers and suppliers. In August we temporarily closed stores in Greater Sydney to retail customers, operating for trade customers and emergency products only. We have since reopened all stores in Sydney in line with the health advice, although we continue to monitor and swiftly respond to any lockdowns as they occur.

At all times throughout the pandemic Bunnings has prioritised the safety of our team and customers as well as compliance with State government restrictions. Bunnings was one of the first businesses to introduce face masks as a condition of entry and has maintained a relentless focus on safety, including deep cleaning of stores daily, distancing requirements, contactless payment options and limiting customer numbers in stores. We continue to ask vulnerable and at-risk team members to remain at home during outbreaks for their wellbeing, and while Bunnings has not applied for JobKeeper, last financial year we provided these team members more than $1.8 million in pandemic leave. Most recently, space for vaccination hubs has been provided at several Sydney stores to increase access for our team and trade customers. I look forward to your questions. Thank you, Chair.

The CHAIR: Mick Veitch will start the questioning for the Opposition.

The Hon. MICK VEITCH: Thank you all for your attendance today. I detect that you both read from opening statements and I just wonder if it would be possible, in lieu of not having a submission from your organisations, for you to email those to the secretariat so we can have a look at them [audio malfunction] transcripts. That is just a request. I come from Tumut, so I have got a pretty fair idea about the impact of the Black Summer on the softwood supply. I think that there was a failure to stress or pressure test our policy settings in the timber and forestry space, which was highlighted by last summer. I have got two questions that I want to explore today. The shortage of supply is clearly having an impact on the construction of houses in Australia and New South Wales. Is there any way of quantifying what the additional cost is of that supply issue at the moment on building a house? We might start with Mr Dadd.

Mr DADD: Thanks, Mick. You are right about supply shortages. We are seeing long lead times now opening up for the supply of frames and trusses and other components too, and that is exacerbated obviously by real difficulty getting imported products, which exposes the reliance of our domestic industries on imports in this space. It is very hard for me to put a price on how much this is costing us but anecdotal evidence suggests that many building products, but particularly timber, are increasing by 20 per cent or 30 per cent in recent times. I guess you have also got some labour constraints exacerbated by COVID and also the shift from multi-rise to more single dwellings. I think all in all this is costing us in delays and it is costing our market significantly in price.

The Hon. MICK VEITCH: Mr Caust?

Mr CAUST: A bit like Stephen, it is hard to sort of quantify. For us no doubt we are seeing longer lead times. If I just think about frame and truss plants, which is obviously early in the build stage, when we look at our supply to customers we take a framework really from the build stages of a new home and that sort of plays out in renovations and other projects as well. Obviously timber, although used in different parts of the build stage, is quite substantial from a value point of view early in the build stage around frames. We sort of estimate inside the value of material supplied in a house that about 14 per cent of the total value sits in that frame space. For us it is quite a significant piece; it is early in the build stage. For the current delays we are getting, from a frame and truss plant point of view normal lead times for us may be four to six weeks. It is case by case but we are seeing somewhere between eight to 16 weeks lead time to get frame and truss out to our builder customers. That obviously adds complexity to the project time lines and the cost, and also the scheduling of trades becomes a challenge for the builders. I might refer to my colleague, Mr Morton, to see if he wants to add a bit more flavour around the cost of the product.

Mr MORTON: Sure. Thanks for the question, Mr Veitch. From a sourcing perspective, we, alongside most other merchants in the country, source a mix of locally produced framing timber and imported framing timber. We have seen that the cost of locally produced timber has been escalating because of a number of different factors, including availability of logs on the back of the bushfires. The import demand globally has been significant. The factors that are driving the economy here are in place over in America and Europe and other parts of the world as well, and so global demand for timber has never been higher. On the back of that, there is also significant challenges with shipping globally which have been escalating prices, not just for timber but for any imported goods. That figure that Mr Dadd mentioned earlier of around 30 per cent would certainly be ballpark. Depending on where you are in the country and what your supply chain looks like, it could be a little bit higher than that as well.

The Hon. MICK VEITCH: I think Mr Dadd spoke about the need for a plantation investment policy. In the timber and forest space, policy settings generally are long term, so they are not on the electoral cycle where every four years a change of government or whatever changes the policy settings. Essentially, for softwood you need about a 20-year investment strategy and for hardwood plantation I am gathering about a 50-year strategy. Would that be correct? Mr Dadd, when you talk about plantation investment policy, what do you actually mean by that?

Mr DADD: Yes, probably more like 30 years would be the minimum for a sawlog for the softwood industry. It is a bit longer than 20 years. At 20 years you might be able to harvest some low-grade timber, some small logs or some thinnings for panels, but for sawmills and for framing timber you are really starting at 30 years. You are about right for hardwood—50 years probably for a decent hardwood sawlog. In terms of policy settings there is a number of things. One of the biggest areas of uncertainty I suppose for investors is in a sense an overhang from the old MIS days, which burnt a lot of people and has scarred a lot of investors for a long time. I think that was a classic case of taxation-driven investments where trees were planted in the wrong locations, they were the wrong species, they were poorly managed and it all fell apart. That is not what we are talking about now; we are really talking about more targeted plantation strategy.

The policy settings that can facilitate that include such things as a workable carbon policy. It is frustrating for those who may wish to invest that the carbon farming initiative [CFI] does not allow a credit for carbon for plantations planted in areas where rainfall is above 600 millimetres. Frustratingly, that is exactly where trees grow. That is a policy which really is designed to keep plantations away from decent farming areas, and I think trees are nothing other than an agricultural activity if they are planted in plantations. That would be a good starting point. The CFI policy is quite difficult for many people to get their heads around. That is probably not enough though. I think even with the relaxation of carbon, we need other clearer policy settings, I think, around water. I think there is an effort to dictate to farmers what they can plant in forestry, which does not apply in other agricultural means. If you look at the burden of administration and policy settings around for farmers who may want to plant trees, it is much higher if you are contemplating forestry than it is for just about any other agricultural pursuit. I think they would probably be the sorts of things that would be a good starting point.

The Hon. MICK VEITCH: Mr Dadd, you spoke about MIS—I just missed what you said there. It might be handy for Hansard if you actually say what those letters mean.

Mr DADD: Sorry, MIS is the managed investment schemes that were around perhaps 20 years ago: Companies like Great Southern Plantations and others were set up to plant a lot of trees. In hindsight it was a fairly ill-conceived plan that led to a lot of investment collapse at that time.

The Hon. MICK VEITCH: Thank you for that. There is clearly a shortage—I think you said a chronic shortage of timber, Mr Dadd. How long do you envisage that shortage will last and what is the impact on the New South Wales economy of that shortage? I will start with Mr Dadd and then I will go to Mr Caust.

Mr DADD: It is significant. The estimates from our industry talk about a deficit of 50,000 house frame lots over the next seven or eight years; that is significant. If you annualise that, you can see that that is a fairly significant chunk of our annual construction output, particularly at a time when imports are becoming difficult for all the reasons that my colleagues from Bunnings mentioned. We really are all alone now in terms of providing additional fibre to our own domestic market. When you consider that a typical house may consume about 20 cubic metres of framing timber, and when it is delivered as a frame and truss that is worth about $45,000, and you add to that all the other timber that goes into a house, and it is far and away the largest component of construction when you add the bathroom cabinets, the kitchen cabinets, the architraves, the doors, the decking, the flooring et cetera, you are really looking at $70,000 to $80,000 of timber componentry in a typical house. If all of that is difficult to procure with long lead times, you can see that the ripple effect, as my Bunnings colleagues have mentioned, flowing through to the economy is quite significant.

Mr CAUST: Thank you, Mr Veitch. From a Bunnings point of view, I agree it is very significant. I can truly say that for those in our business who are responsible for either sourcing product or selling product, especially around the structural timber and the challenges we have got in that space at the moment, it is a daily occurrence of basically, "How do we get more timber?" We are very focused on supporting our customers right now but really concerned about the future as well, as highlighted in some of the references that Mr Dadd mentioned around the long-term shortage in all States around Australia.

Mr MORTON: Just to add to that if I may, the shortage that we are in at the moment initially was a supply-driven shortage, but what we have evolved to is more of a demand-driven shortage. That is, as I mentioned earlier, a global demand issue; it is not just an Australian issue. Until that demand starts to drop I think we will be in a very similar position. If we could get timing, we would all be very happy and probably sleep a little bit easier at night because it is a really challenging position for not only the producers but for the merchants and the customers who are trying to source the timber. We envisage this is going to be with us for a period of time still, but we do not have a clear view on exactly when that demand is going to start to drop off.

The CHAIR: I might throw to Justin Field if he has any questions.

Mr JUSTIN FIELD: I do, Chair, thank you. Thank you for your attendance today. I wanted to get to that last point. We have heard discussion about shortage, particularly of softwood timbers, in part driven because of the fires, but we know that a lot of salvage logging occurred immediately after the fires, which saw substantial additional amounts of softwoods cut. I assume they are now available for use by companies like yourselves. How much of the short term—the next two to three years—of supply is coming from that local supply issue versus those international factors that have also been mentioned? When do you see that transitioning? Obviously there will be a longer term impact from the fire damage on our softwood forests. I will start with Bunnings.

Mr MORTON: Sure. We do not have a clear view; Mr Dadd is probably best to talk to the salvage logging. From the suppliers that we work with, our understanding is that the salvage logging in New South Wales is pretty much complete and the majority of that timber has been processed. What we do know is that when we look at all of the mills that we work with across Australia and in New South Wales specifically, they are all running at or very close to capacity. There is no additional upside for the majority of mills to produce any more. They are all working really hard on improving efficiencies and increasing yield—the amount of usable timber or sawn timber they get out of each log—but there is no significant upside coming in the near future from local production.

Mr JUSTIN FIELD: Before you answer, Mr Dadd, that does suggest that very little of the current supply issues are coming from a shortage of softwood timbers here. It seems that the increase in demand is the biggest factor and then the inability to bring some of those import timbers in—at the moment.

Mr MORTON: At the moment, yes. I believe the mills at Tumut and Tumbarumba are not running at full capacity because they were the most heavily impacted by the bushfire shortages. The challenge there is that because of those bushfires there is not available log to bring them up to full capacity.

Mr JUSTIN FIELD: Mr Dadd, did you have anything to add to that?

Mr DADD: I would just confirm what Mr Morton has said, Mr Field; he is spot on. The mills around Tumut and Tumbarumba, which was the epicentre of those softwood plantation fires, were working around the clock for the first 12 months after the fire to salvage that timber. It was a race against time because once the timber is dead it deteriorates within about the nine- to 12-month time frame on the stump and cannot be used for sawmilling purposes. That phase has concluded and those mills are now facing the reality of structural shortage in their intake. If anything, the true supply and demand issues that we have talked about have not really fully come home to roost yet because we have been running pretty busy as an industry for that period of time. Typically 25 per cent to 30 per cent of our framing timber is imported, and while there still has been some imports, that has

become more difficult. Your assertion that perhaps the worst is yet to come is probably correct. We have been dealing with a demand surge more recently, even though supply domestically has been somewhat normal—perhaps until about now.

Mr JUSTIN FIELD: Mr Dadd, this might be slightly tangential and you may not be able to speak to it, but Boral has recently sold its timber division. You have sort of gotten out of the hardwood milling sector. I am just wondering what that says about the status of the industry. As an organisation that also wants to access that timber for its other divisions for construction, can you speak to why you have made that decision?

Mr DADD: A little, Mr Field. Some of these decisions are corporate decisions and are to do with corporate strategy. We have not sold our timber business yet; that is still in process but it is progressing. Boral's global strategy has shifted to focus on the heavy side of the industry—construction materials, largely quarries, concrete and those sorts of things. Boral actually has very little involvement these days in the building products business. In fact, my businesses are some of the last globally in Boral's former network of building products businesses. Other than through cement and concrete and the slabs we pour, we are not actually exposed to housing anymore. It has been an evolution of the corporate strategy.

Mr JUSTIN FIELD: Does that suggest that the materials for building might move, as prices for timber increase, to your cements and to your steels as a result of these changes in the timber industry?

Mr DADD: Mr Field, I really couldn't comment—it would be inappropriate for me to comment on potential price movements in building products. That is probably not something I want to discuss for fear of breaching ACCC rules around those sort of disclosures.

Mr JUSTIN FIELD: Thank you. I think my time has expired. Thanks, Chair.

The CHAIR: It has, thank you. I might just start with some questions to Mr Caust and Mr Morton. You spoke about a difficulty to procure for the building industry. Have you seen a corresponding decline in people needing to buy other building products that would come after putting the frames up of a house? There is the slab and then there is the frame and then there is a whole lot of other trades and building products that are engaged once that frame is up. You could probably say that the majority of the building trades are engaged after those frames are up. Have you seen the corresponding decline in the need for those products?

Mr CAUST: Thanks, Chair. Mr Morton will probably be able to answer a little bit around the supplier base and sourcing. As I said earlier, we do take a lens on construction, and our supply to builders is basically from slab to the finishing products. We look at the different build stages. Obviously, as I said earlier, the frame stage, which we would call the second part of the build stage, is pretty critical. A high component of the materials are supplied in and any delay that would be happening there—and I sort of alluded to it before around the frame and truss lead times blowing out—would impact the flow-on effect of other build stages. No doubt there is pressure on the supply chain throughout the whole of build. That is not all products, but any delays that happen in the frame stage flow on to other build stages. Specifically about products, there are some other challenges in products but it is more about the delay. When we hold up a project because we cannot get a wall frame or a roof truss or a floor cassette out, that puts delays on the project and also throws out the scheduling of the trades on that build stage. Mr Morton might want to add some more to that.

Mr MORTON: Sure. Activity is still fairly strong in the scheme of things because of the demand. We are finding that the biggest challenges have been any other imported products. From a framing perspective, a lot of engineered timber—laminated veneer lumber [LVL] timber, high joists and those sorts of things that are used in floor systems and in some structural applications within the frame—has been really difficult to procure. There is only one Australian producer over in Western Australia who are doing their best to keep everyone going, but the bulk of the engineered timber, for example, is imported. They have been up against the same supply chain issues that we spoke about earlier for imported framing and any other imported products. There are a lot of appliances and bathroom fixtures and those sorts of things that do come through imports as opposed to being locally produced. Some of those have had delays but the delays are all concurrent, if that makes sense. We find that the build time has been extended across the normal scheduling of a build but there are delays in many different areas, if that makes sense.

The CHAIR: Yes, sure. I have probably only got time for one more question so I will throw it out to both stakeholders. We have seen some submissions around the certification process, and I am picking up on your comments, Mr Caust, about the certification process. Some of the submissions have called for greater assistance for timber operators to actually meet those certification standards. Do you think that if assistance was maybe provided to smaller operators to meet those certification standards that would actually assist in the supply of timber and improve the supply of timber? I will start with Bunnings and then we can go to you, Mr Dadd.

Mr MORTON: Sure. I might field that one, Mr Caust. Bunnings has had a really robust timber policy in place for well over a decade where we do hold our suppliers to account around supply chains. We look at making sure that all of our supply chains, all the way back to the forest, are sourced sustainably and responsibly. A part of that is through certification schemes like PEFC and FSC, and they can be quite complex and quite challenging to meet but we feel that they are incredibly important to ensure a sustainable long-term source of material, particularly when we look at areas that are highly contentious around biodiversity or endangered species or other high conservation values. It is really important that it is part of the conversation for all suppliers, from our perspective, from our sawmillers and also down to the forests as well. We have had challenges in the past with smaller suppliers having to work through that process, so anything that industry or government can do to help support with education more than anything around the benefits of certifying some supply chains would, I am sure, be highly beneficial.

The CHAIR: Mr Dadd, do you have anything to add?

Mr DADD: I agree with Mr Morton. These rigorous and fairly onerous certification standards are very important. This country is a net importer of timber products—a multibillion dollar trade deficit in timber products. We cannot produce enough for ourselves so we are reliant on foreign timber, and a lot of that is coming from the tropical hardwood forests. We know and we understand the real risks we have in sourcing timber from those areas when you look at the devastating deforestation and illegal logging issues. I think our front line is rigorous certification standards. I would not want to see those watered down. We use the PEFC standard, which we find helpful to our business. I cannot really comment on how this would apply to small producers and whether this is a constraint on their ability to supply, but I would certainly support the ongoing use of standards as a front line in the defence against those other issues.

The CHAIR: My time has unfortunately expired so I will pass to the Government.

The Hon. SAM FARRAWAY: Welcome to today's inquiry, gentlemen. My first question is to Mr Morton. In one of your answers earlier you were talking briefly about global demand. I am trying to get my head around domestic demand and trying to get a full 360 degree view of what is happening in the industry. Clearly there are lots of factors that are putting the industry under pressure. Yes, we know about the devastating impacts of the bushfires and what that has done to the industry, but is it fair to say that domestic demand is the greatest or highest it has ever been for timber products whilst facing an absolute crisis in supply?

Mr MORTON: Mr Farraway, I think there have been a number of factors that have really driven demand. Initially when we first went into COVID and there were lockdowns and travel restrictions around Australia, no-one in the industry, including ourselves, knew what the impact of that would be. But what we found is that people who may not have had the ability to travel were starting to actually invest some of that money that they might have spent on travel in their homes. We saw a huge increase in DIY activity from our perspective where customers were improving their backyards, building decks, renovating homes, performing maintenance and all that sort of thing. Then the second factor I guess is that the government stimulus, which has come through to support industry and keep the economy moving, was incredibly success and we believe that the take-up of that stimulus for new home builds was significantly higher than anticipated. That is I guess what we are seeing now with the construction industry. The outcome of that is that we have got a really long pipeline of work which has been approved and started. Now it is just a matter of managing that product flowthrough to support those projects as they start to come out of the ground.

The Hon. SAM FARRAWAY: One of the points that I found interesting in talking to people—I live in Bathurst so I was talking to people who own truss and frame companies in Bathurst and also more broadly in the Central West. Excluding the impacts of the bushfires—and a lot of builders I have spoken to as well and also when you look at some of the commentary in the media from the builders' peak bodies and associations—in terms of building new houses in this country, the feedback I have got from industry is normally that one State is booming and another State is lagging. What they are saying has been happening over the past couple of years, in particular the past two or three years—and COVID may have exacerbated this as well—is that every State is seeing a massive housing boom. When you compound that on top of bushfires, they say, "This is why we have the problem we have right now." From Bunnings' point of view, is that something that you might see across all States and not confined to just one State?

Mr MORTON: Yes, that is accurate. It is very rare that we see every State in an up cycle or a high cycle that we are currently seeing at the moment. Likewise, it is very rare that we actually see globally that all the major timber producers or the timber consumers—America and Europe are the two largest ones—being in a high cycle at the same time that we are. Traditionally what would happen is that if we were in a higher building cycle, and that would generally be two or potentially three States or Territories with higher levels of activity at once, that then puts demand pressure on local production and we would use import product to alleviate that. Within two

to three months, which is how long it can take for some of those import supply chains to ramp up, we see that that pressure is alleviated and then we see the cycle start to come back down the other side. But in this instance we have not had that pressure relief because the access to material from overseas due to demand and also shipping constraints has been very challenging.

The Hon. SAM FARRAWAY: Do you have anything further to add, Mr Dadd?

Mr DADD: Mr Farraway, the only thing I would add to that would be a shift in demographics, which is further changing the demand profile. Since COVID we are seeing a lot more people wanting to live in detached dwellings, even in regional centres. That lends itself more towards timber-oriented construction than perhaps steel and concrete.

The Hon. SAM FARRAWAY: Moving on and talking mainly about softwood, obviously we have seen developments in and around the Chinese trade embargo. Back on the seventeenth of this month we saw the Deputy Premier and Minister responsible for forestry direct the Forestry Corporation to make an additional 270,000 tonnes of timber available into our domestic supply chain and markets over, I think, the next three years. From industry's point of view, how much of a difference will this make in the short term? This industry certainly has short-, medium- and long-term challenges, but if we just focus for the moment on the short term, how much of a difference will that make?

Mr DADD: That is an overwhelmingly positive policy decision, Mr Farraway. I think any time we can divert export timber to our domestic manufacturing industry makes sense, particularly at the moment when we face such shortage and many of those mills are reeling from supply constraints to do with the bushfires. It is most welcome and the economics work. It is good quality timber and incrementally it makes a lot of sense. Is it significant? Every little bit helps, but I think you will find that as a percentage of the total supply in the New South Wales market and for the length of time that has been considered for, it is fairly small but certainly most welcome.

The Hon. SAM FARRAWAY: Did anyone from Bunnings have anything to add or to comment on that?

Mr MORTON: No, nothing from me.

The Hon. SAM FARRAWAY: Mr Dadd, I noticed in your opening statement that you said the industry—and I think you were talking broadly about industry as a whole—really wants stable policy for this industry. I think the way you described it was policy stability. I want you to expand on what you think stable policy is for this industry moving forward, especially for an inquiry that is looking at the overall sustainability of this industry.

Mr DADD: Thanks, Mr Farraway. I would start with wood supply agreements. Industries like ours need an investment horizon, and the nature of our wood supply agreements, as they have been for many years, is that they have fixed tenure. As you get closer to the end of those wood supply agreements, industries like ours start to look at them and say, "We cannot afford to invest in this industry because of the uncertainty of the termination of wood supply agreements." A mechanism for allowing a permanent horizon for investment would be helpful.

Secondly, I think particularly since the bushfires we have had some very mixed interactions with various government departments that have created real concern, particularly in our hardwood business where we have supply constraints in our South Coast and North Coast mills and an unwillingness to return to normal conditions, even though there are many parts of the forest that have recovered really well since the bushfires. We seem to have this political carryover from the initial uncertainty about what supply was out there. There has been a lot of good studies done around the impact of the fires and what we can sustainably harvest, and we still have not seen a return to normal conditions. I think underlying, too, there are other policies, as I mentioned earlier. The carbon policy, particularly, for plantation investment is one. That is probably a starting point for the policy stability that I mentioned.

The Hon. SAM FARRAWAY: Any further comment from Bunnings?

Mr CAUST: Not from me. I probably cannot speak to the same expertise as Mr Dadd can, but I would be very supportive of any government support in this space and for the ability to bring key industry stakeholders together to help solve the current challenges.

The Hon. SAM FARRAWAY: Thank you. That is my end of questioning, so I will throw to any of my Government colleagues if they have any further questions? Looks like they do not, Mr Chair, so I think Government questioning is finished.

The CHAIR: Thanks. You only had about a minute and a half left anyway, so—

The Hon. SAM FARRAWAY: Good timing.

The CHAIR: Good timing. Thank you to the witnesses for spending some time with us and providing some great insights. I do not believe any of you took questions on notice, but if you did the Committee secretariat will be in touch with those questions. I do foreshadow there may be some supplementary questions that members wish to put to you on notice, so you may receive some in the coming days. Once again, thank you for your time.

(The witnesses withdrew.)

(Short adjournment)

JAMES FELTON-TAYLOR, Director, Australian Sustainable Timbers, affirmed and examined

DAMIAN PAULL, Chief Executive Officer, Forest Stewardship Council (Australia and New Zealand), sworn and examined

SIMON DORRIES, Chief Executive, Responsible Wood, sworn and examined

The CHAIR: Good morning. Welcome back, everyone, to our second session of today's hearing into the long-term sustainability and future of the timber and forest products industry. We now have with us Mr Damian Paull from the Forest Stewardship Council, Mr James Felton-Taylor from Australian Sustainable Timbers and Mr Simon Dorries, Chief Executive of Responsible Wood. Welcome to you all. Would any of you like to make a short opening statement—given our time limit, maybe one to two minutes? Starting with you, Mr Paull?

Mr PAULL: Thanks, Chair. The Forest Stewardship Council [FSC] was invited very late in the process, so we have not had a chance to make a submission. So if the Committee would allow me to make a short opening statement—it is about two pages—I would be happy to do so.

The CHAIR: Yes.

Mr PAULL: Committee members, thank you for the opportunity to give evidence at today's important hearing. By way of introduction, my name is Damian Paull. I am the CEO of the Forest Stewardship Council in Australia and New Zealand. As you may know, FSC is an international not-for-profit organisation that offers a voluntary certification scheme to promote environmentally appropriate, socially beneficial and economically viable forest management. We do this by developing standards for forest management adapted to local circumstances. Globally, FSC certifies in excess of 225 million hectares of forest and close to 50,000 organisations in the supply chain. FSC, internationally and in Australia, has a unique governance structure that splits our members and directors into three distinct chambers that represent economic, environmental and social interests.

To ensure influence is shared equitably between the three chambers, voting is weighted so each chamber has an equal say. This unique governance model gives FSC a strong social licence to operate, as our standards are developed and supported across our diverse membership. While the scope of our standards for forest management in Australia covers natural or native forests and plantations, plantations do make up the bulk of our certified area, while we have a few small holders, like Australian Sustainable Timbers, that harvest in the natural and native forests. It is, however, important to stress that all organisations can demonstrate conformance with our forest management standard to their independent certification bodies and can get certified. If we move on to the inquiry into the future and long-term sustainability of the timber and forest products industry in New South Wales, I would like to address sections (e) and (f) of the Committee's terms of reference.

If we start with section (f) first, regarding the role of government. It is abundantly clear when reading through the submissions that the Committee has received that there is a lot of concern amongst the social and environmental stakeholders in particular about current forest management practices in the New South Wales native forest industry, particularly when it comes to the State-owned corporation Forestry Corporation of NSW. These concerns primarily relate to insufficient stakeholder consultation, Indigenous peoples' rights, management activities that threaten high-conservation values including old-growth forests, and harvesting in habitats of rare, threatened or endangered species.

I am not here to comment on Forestry Corporation's management activities, but I would like to take the opportunity to note that the FSC system and our forest management standards have a strong emphasis on addressing the issues that have been raised in the submission to the Committee. Harvesting in accordance with FSC Australia's forest management standard, which is supported by our social, environmental and economic stakeholders, would help adjust management activities to address the concerns expressed regarding current practices.

In relation to section (e), which concerns opportunities for the timber and forest products industry and timber-dependent communities, we believe that the recognition of and payment for ecosystem services provides a unique opportunity. In 2018 FSC introduced our ecosystems procedure, which incentivises the restoration and conservation of forest ecosystem services by certified forest managers. The procedure focuses on five types of ecosystem services. Certified forest managers can demonstrate and communicate the positive impact of their management activities. These five ecosystem services are biodiversity, carbon, water, soil and recreation. These verified positive impacts can, in some cases, facilitate payments for ecosystem services and, in others, enable forest managers to communicate about the positive impacts, as verified by their independent certification body, or what we call certification bodies or auditors. This adds business value for forest managers who responsibly manage forests and for those who take action to preserve those ecosystems.

Take carbon, for example. As we know, forests are a very effective means of sequestering carbon. While Australian companies are not legally required to reduce their carbon emissions, they are voluntarily ramping up investments to offset those carbon emissions. Driven by a global shift through an ambitious climate action, Australia's carbon market is surging and the spot price on carbon credits is expected to more than double by 2030. With the appropriate policy settings, mechanisms and safeguards in place, New South Wales forests have a significant potential to contribute to Australia's efforts to mitigate greenhouse gas emissions while providing alternative revenue streams that will create local jobs. The other ecosystem services covered by the FSC Ecosystem Services Procedure, like biodiversity, water and soil, are more difficult to monetise, but they would present an effective means to communicate positive impacts from forest management in New South Wales. Thank you for the invitation to appear before you today and I am happy to take questions.

The CHAIR: Thank you. I might just throw to Mr Taylor, if you have an opening statement that you wish to make?

Mr FELTON-TAYLOR: Yes, I do. Actually, my last name is Felton-Taylor, for the record. Australian Sustainable Timbers operates in the lower North Coast and Hunter region of New South Wales. In 2007 we achieved FSC, forest stewardship certification, in native forest. We were the first company in Australia to achieve that certification in native forest. We also operate a group scheme where we manage private landholders in that process to that FSC certification standard that Mr Paull was just speaking about. As a company, we are vertically integrated. We conduct forest management planning, harvesting and milling, and we produce appearance grade products such as flooring and decking and green sawn timber. We supply these timbers mainly to domestic residential jobs as well as large commercial projects. The larger commercial projects, examples of those are: the Sydney Water redevelopment in Parramatta; Sydney Metro, where we supplied FSC-certified timber to some of the train stations involved in that project; and, more recently, to the Marrickville Library redevelopment.

We believe that within the industry there is a general confusion between the intrinsic sustainability of trees and the complexity of managing a forest sustainably. Mr Paull touched on the way FSC goes towards addressing those issues. We believe forestry can be done well; however, we need to both focus on what is left behind rather than what is extracted. As foresters, I think we often get a bit carried away with talking about what is coming out rather than what is staying behind. You have got to remember that when we manage the decisions we make in the forest, they are with us for 80 to 100 years plus. Forestry, it is complex, it is political. But we need silviculture back in the forest operations, not just rhetoric on the shelves. There are great forest management plans conducted—they largely sit on the shelf. They read really well if you go through them, but it is often poorly implemented on the ground. We need an innovative and regenerative approach that balances these ecological, economic and societal interests. Thank you.

The CHAIR: Thank you. Mr Dorries, did you want to give a statement?

Mr DORRIES: Yes, just very briefly. First up, I just want to confirm that you have received my submission. Thank you, great. Just a little bit of background on Responsible Wood. We are an accredited standards development organisation. Our role is to write, develop and produce the Australian Standards for sustainable forest management. We have two standards in our portfolio: AS 4708 for Sustainable Forest Management and AS 4707 for Chain of Custody, which provides the mechanisms for tracking and traceability of forest products in the market back to source to verify that they come from a sustainable, managed forest.

In regard to the inquiry, I really have probably three points I would like to raise. The first one is in regard to item (e), opportunities for the timber and forest products industry, and really it relates to private native forests. There is no doubt going into the future that well-managed, sustainably managed private native forest is going to be an increasing part of the wood basket from which sawmillers will draw their resource. So a couple of points. The first one is to continue to provide support for the New South Wales Local Land Services [LLS] to establish cost-effective systems for the certification of private native forests. I understand that the Local Land Services codes are under review. As part of that process, if it is practical and possible to align those requirements and regulations with certification standards, it provides a much more effective route for certification of private native forests. If the laws and regulations are already aligned, much of that could be considered deemed to comply or deemed to satisfy and then making the regulatory burden of certification much greatly reduced.

The second thing is, within the resources of government, if it is possible to run some pilot projects around the certification of private native forest. It is done oftentimes through group schemes. Group schemes do tend to be small. It is very difficult to get a group together and to get it to operate effectively. So, again, running some pilot projects to demonstrate to the wider agricultural community that it is possible to have cost-effective certification and broaden their market access, but also, more importantly, certification improves their management practices—which, to me, is absolutely essential. The third matter I would like to raise is item(f), the role of government to encourage improvements in forest practices and training, and again related to private native

forestry. There is a great lack of skill and expertise in private native growers, landowners, on how to manage their forests more effectively—simple things like improved planning, appropriate thinning, better forestry management. By providing some basic skills, education and training, it will improve forest health significantly. Also it will improve forest productivity and provide a much greater supply of sustainably-grown forest products from private native forests. Thank you very much.

The CHAIR: Thank you. I will now throw to the Hon. Mick Veitch.

The Hon. MICK VEITCH: Thank you, Chair. My first question is to Mr Dorries. I want to continue exploring the certification of private native forests with him. Why is it important to have certification for private native forests? That is the first thing. What are the benefits and is it costly to achieve for the private forest operator?

Mr DORRIES: Absolutely. The first benefit is improved market access. We are seeing increasingly especially the large box building suppliers, for example, Bunnings and organisations such as Bunnings—Bunnings, for example, now has a policy if it is not certified, they will no longer carry those products, which effectively excludes private native forestry going into the future from many supply chains. So it is not a matter of: Is certification an option? Increasingly it is not. For that wood supply to find a home in the market, it is going to be necessary, and as time goes forward it will become more important.

Secondly, what are the benefits? First of all, you have improved forest management practices. So, again, for a private native forest it will improve forest health, well-managed forestry will better manage pests and diseases, much better planning, you have a higher-skilled forest manager, and there is also the independent audit process. An independent expert will then overview those processes. There is a process of continual improvement where weaknesses are identified and then through corrective action they are improved. So, again, you have economic benefits, you have forest health benefits, you have productivity benefits and you also have social benefits because a greater supply of wood products is going into small, local sawmills. So it is a good thing all around. Does that answer your question?

The Hon. MICK VEITCH: That is good, thanks. You spoke about pilot schemes or pilot projects.

Mr DORRIES: Yes.

The Hon. MICK VEITCH: Clearly native forests are different in different parts of the State of New South Wales.

Mr DORRIES: Absolutely.

The Hon. MICK VEITCH: Have you thought through, Mr Dorries, just how many pilot schemes or projects you think would really test the certification model and advance its cause? So, for instance, one in the north, one in the south, one in the west, or is it much more complicated than that?

Mr DORRIES: Not really. I think the reluctance around certification is often associated with poor perceptions of it. It is perceived as being technically difficult, challenging, too much for a private landowner to manage. So it is really about demonstrating that sustainability can actually be very easy, it can be cost effective and the benefits far outweigh the costs. The number? Probably three or four in different types of forests across the State. So, as you said, in the north and the south and maybe even potentially in the west.

The Hon. MICK VEITCH: Thank you. My next lot of questions, I am guessing, are probably for Mr Felton-Taylor. It is to do with silviculture practice. I have been reading your submission. What I would like to ask is, what are the past failings of silviculture practice in New South Wales and what do you see as the way forward to enhance, improve silviculture practice?

Mr FELTON-TAYLOR: [Inaudible].

The Hon. MICK VEITCH: I think you are on mute.

Mr FELTON-TAYLOR: Thank you. Silviculturally, where we have sort of run into a lot of trouble is that a lot of the practices have been very highly selective. So the silvicultural practices have not actually been responsive to the forest that they are being operated in. One of the silviculture methodologies that you hear a lot of in our forest types is single tree selection. Whilst this enables you to address the code for forestry in New South Wales, it can lead to a process and has led to a process over the years of creaming or high grading where, repeatedly, the better species and the better and better formed trees are continually removed until you are left with forests that are comprised of poor form trees and lower grade or lower preferred timber species.

It is really important to acknowledge that across New South Wales we have got great diversity of trees—of eucalypts, of timber trees—which is a great strength. But those different species have got different demands and they have got different products. Historically, what has happened in the industry is that the pine segment has

gone in and taken out a large percentage of the market for the lesser preferred species—so, the altitude species, the species with lower natural durability. The higher durability timbers—your tallowwoods, your white mahoganies, your ironbarks—they can be used externally and in those appearance grade products. They are your really high-value products: flooring and decking and cladding. Those lower grade species—your ash species, your altitude species—were traditionally put into the building segment of the market, but now pine has moved in and pushed them out of the pricepoint. So that process of high grading, what it has done is it has reduced the number of higher quality trees in the forest and that is putting pressure back on their harvesting. That process has led to a degradation of the forest now, so you have got that issue.

You have also got the issue where you have got forest that is regrown from completely cleared land. If you go back over 100 or 150 years, we cleared a lot of land for agriculture and a lot of those areas have regrown back to what we call regrowth forests. They are often quite species reduced because the regeneration process reflected the trees that were left within that environment. Often these were the cattle camps back in the day. So you have got one or two species seeding large tracts of land. Now these forests will regenerate at up to several thousand trees per hectare. If you think about an old-growth forest on one side having 20 to 40 trees to the hectare, there is a process by which the forests go through a thinning process to achieve that state. As the tree gets bigger, it has got more site resources, it needs more nutrient and more water.

However, a lot of our species do not self-thin very well. So we need a process—active management, active silviculture—that actually goes in and helps these forests to move back to a more natural state, which is higher species diversity, better quality stems and more spaced out so that they can actively grow. We have got thousands of hectares in New South Wales—and I mean tens of thousands of hectares in New South Wales—of forest that actually is not actively growing because it is what we call "locked up". That inter-tree competition is too high and these species, they do not self-thin very well, so they do not take one for the team. Once again, different species have got different ecological needs and that is reflected in how they need to be managed. Our silvicultural processes have been a bit one product for right across the spectrum.

The Hon. MICK VEITCH: Thank you. Mr Felton-Taylor, within the New South Wales Parliament I know within my own team I am referred to as the "weed man". I have taken a personal vendetta against weeds, having grown up on a farm. I come from Tumut. Down my way, post-bushfire, the weed regrowth is unbelievable. It is phenomenal and I do not know how the government agencies are going to get on top of it. I noticed in your submission you do mention the unregenerated forests, post-logging operations, due to weed infestations such as lantana. Post-bushfire, is it an imperative the Government invests heavily in weed eradication and management?

Mr FELTON-TAYLOR: I think what is crucial is that once again it is taking that holistic approach. Because obviously in some areas of your forest after fires there is going to be complete stand death and in other areas, because obviously eucalypts vary in their tolerances and their ability to withstand fire, and obviously the intensity of the fire that goes through. So weed control is definitely going to be crucial and managing that process according to what that actual forest area needs. Because if it has been a "lighter burn" the trees will not necessarily have suffered death and their natural ability is to come back. Natural regeneration, where it is effective, is by far the best regeneration process. It is fastest if you have got coppice off existing stand, off existing trees. But weed control is definitely a major issue. Particularly here in the Hunter and the lower North Coast region, and I know right up the North Coast, lantana is our biggest bugbear probably.

The Hon. MICK VEITCH: Thank you. In your opening statement I think you said you have gone through the certification process or you are certified as a private native forest. What was involved in the certification process? Was it costly or prohibitive in any way and was it worthwhile? What is the benefit of going through that exercise?

Mr FELTON-TAYLOR: I will start at the back and work forwards, if that is—

The Hon. MICK VEITCH: Yes.

Mr FELTON-TAYLOR: It has been incredibly beneficial for us. It has probably allowed us to maintain our company over that extended period of time. We got certified back in 2007 and at that time obviously we were trailblazers. We were sort of, in essence, reinventing the wheel. So it was difficult in that sense because there was nothing before or in front of us to give us a guidance as to the process forward. At that point in time, FSC did not have our own Australian standard, so we were working off an international generic standard. So we had to tailor that document to the Australian context. At one level we probably did a policies and procedures manual that is almost robust enough to float us on the stock exchange. However, that is not our intention.

It has been incredibly beneficial. It is what has given us access to those large commercial projects. As Mr Dorries touched on it, a lot of the pressure is coming from big business now in that drive for sustainability, and that is what has given us access to those large commercial jobs, is having that certification system. There is a

cost involved but we view that cost—it does a number of things. It does a lot of the marketing for us because obviously people come looking for the certification system. It also gives a third-party audit to what we say. We are all familiar with the term "greenwashing" and we all know that it is out there and active within all markets. By being able to use that FSC certification stamp, it means that when someone asks me those questions I can say, "Well, look, you can go away and do your own research. You can go and look us up on the website and make sure that our certificate is still current". That, therefore, gives me that element of ability to talk and that my words are backed up by somebody else who is looking over my shoulder once a year. That auditing process does come at a cost and it is a substantial cost. But, as I said, it underpins our business through driving business.

The Hon. MICK VEITCH: The independent auditing process, did you say it is annually? Following on from that: Do you get to choose who the auditor is of your certification or is that provided to you by the certification body?

Mr FELTON-TAYLOR: For us, we chose the certification body, but who they get to send to us is at the discretion of the auditing body. That is done annually. Depending upon—we are reasonably unusual because we are a forest manager with certification, we are a group scheme manager and we also have a chain of custody certificate. So if we were just a forest manager, depending upon your scale of operations, your size, you might do one. There is a ratio which they work out, desktop audits versus in-field audits. However, because of the complexity of our certification and having sort of those three levels of certification, we tend to have yearly in field audits where they go and visit a number of the properties and look at a number of the different operations. They get to choose which operation they go to audit. We do not get to choose that. They look at the information that we provide and they go, "We want to go here. Show us what's going on here", and then we work backwards from there.

The Hon. MICK VEITCH: Thank you. It is a great case study for certification. The last question is probably to both Mr Dorries and Mr Felton-Taylor but it relates to research and development [R&D] expenditure in silviculture. Is it sufficient? If there was to be some innovative R&D, what would that look like?

Mr FELTON-TAYLOR: Mr Dorries, do you want to—

Mr DORRIES: [Inaudible].

Mr FELTON-TAYLOR: You are muted.

Mr DORRIES: [Inaudible].

The CHAIR: Mr Dorries, you are on mute.

Mr DORRIES: Sorry about that. My own personal opinion is, to me, the R&D is more about demonstrating the practical application to the agricultural sector on good forest management, as in how to effectively thin and what is required to improve forest management practices. So I think a lot of the fundamental research is well known, but it is more a matter of applying that knowledge and disseminating it out to practitioners. I don't know whether you have a different opinion, Mr Felton-Taylor?

Mr FELTON-TAYLOR: Mr Dorries, I would agree that the fundamentals behind good silviculture, they are well known. There are some great seminal texts out there that really address the ecological regeneration needs of eucalypts and the different forest types. State Forests over the years have done great research into these. There is definitely research and development that can happen around the FMP, the forest management and planning. I think there is a tendency to look towards remote sensing as the Holy Grail of forest management assessment and I think there are some severe limitations to its use.

I know here in our area there are vast tracts of forest where we are growing trees which are not going to be of any productive use to us in the future, and it concerns me greatly—species that have regenerated because the wrong silvicultural method has been utilised. So you have got an overabundance of species that are not really adapted to that site, and particularly as we are moving forward that is presenting all sorts of—it will manifest itself in the physical attributes of those trees when they are milled. And touching on what Mr Dorries said there in terms of showing the benefits that can be gained through certification, as Mr Paull touched on with the submissions, I think the pathway forward for us in native forestry is that we have got to bring the community with us—

Mr DORRIES: Absolutely.

Mr FELTON-TAYLOR: —and that, I think, is through engagement.

The Hon. MICK VEITCH: My time is up. Thank you very much. I could keep talking to you all day on this stuff. It is fascinating. Thanks, Chair.

The CHAIR: Thank you. I will pass to Mr Field.

Mr JUSTIN FIELD: Thank you, Chair, and thank you, gentlemen, for your attendance today. Mr Paull, I would like to start with you, if I could. Would Forestry Corporation be able to get FSC certification under the current logging rules and their existing harvestable area?

Mr PAULL: [Inaudible].

Mr JUSTIN FIELD: I think you are on mute, Mr Paull.

Mr PAULL: That is the meme of the century, isn't it. There is no barrier to Forestry Corporation achieving FSC certification other than current practices and, I guess, a political will within the organisation and within government for them to pursue it. We have seen other State agencies pursue it. Some have given up and others are continuing to make the changes necessary in order to be able to meet the FSC standard. But it is more the political will and the expense and the potential return on investment that are the things I think that are stopping Forestry Corporation actually making that decision.

Mr JUSTIN FIELD: Would logging of core koala habitat be acceptable under an FSC certification?

Mr PAULL: It is always difficult to talk about specifics, but the FSC certification has a framework to preserve high conservation value areas. That includes endangered and protected species. That includes habitat that those species may encounter. So it would be up to the individual forest manager to assess the requirements of the standard and ensure that they are meeting those and protecting that high conservation value area. If they cannot do it, well then they have to move on, use different areas. But our standard is probably unique in that there are not many international FSC standards that have included, for example, old-growth forest within the high conservation value framework. The Australian Standard does. So if that stand of koalas was in an old-growth forest, under our standard old-growth forest is a high conservation value area and cannot be harvested for commercial use and timber. So that would be one way of protecting that area, as an example.

Mr JUSTIN FIELD: What about areas identified under koala plans of management as core koala habitat? It may not be old-growth but it is recognised core koala habitat. Would that be able to be logged under an FSC certification?

Mr PAULL: I am sort of—it is difficult to go in and give you a black and white answer to that. I can certainly have a look at it and come back to you in terms of what the auditors would say. I probably could not give you an exact answer. Unless, Mr Felton-Taylor, you have encountered it under the standard?

Mr FELTON-TAYLOR: Look, at this stage, we have not. What I would say to that question is, it might be helpful, Mr Paull, if you explained the way FSC works in terms of the auditors, FSC (Australia and New Zealand), and then the certifiers of the certifiers.

Mr JUSTIN FIELD: If it is okay, gentlemen, I have very limited time. I would love to get that on notice, if that is not too much trouble?

Mr PAULL: Yes.

Mr JUSTIN FIELD: That would be useful.

Mr PAULL: No, that is fine.

Mr JUSTIN FIELD: I might direct that one to Mr Dorries because, of course, Forestry Corporation is certified by the Programme for the Endorsement of Forest Certification [PEFC], so I assume the Sustainable Forest Management Standard is okay with logging that we know occurs in State forests that are identified as core koala habitat?

Mr DORRIES: Under the Australian Forestry Standard, significant biodiversity values have to be protected or managed. In the case of koalas, there has to be a koala management plan based on good science, so that either the habitat or the koalas are protected and they can show that there is no long-term detriment to those koala populations.

Mr JUSTIN FIELD: Given that we have seen a dramatic decline in koala populations—I know partly through fire but I think even our own environmental standards recognise logging as one of the—loss of habitat as the single biggest impact on koala populations. What is the science that the standard is relying on and PEFC is relying on in certifying Forestry Corporation's activities in known koala habitat?

Mr DORRIES: So Forestry Corporation will have a koala management plan. It will be based, as I said, on research, obviously. It will determine where the populations are. Areas where there are particularly high populations would then come in as significant biodiversity values and in many cases those areas would not be logged. In other areas logging will occur but in such a way so that the koala populations, there is no detriment to them.

Mr JUSTIN FIELD: Mr Felton-Taylor, you made some comments at the start I think around the definition of sustainability in forest management. Obviously you operate quite differently to a standard private native forest [PNF] operation in that you have got the FSC certification. Can you expand on what you mean about that and do you think that the Sustainable Forest Management Standard managed by Responsible Wood can actually ensure sustainable forests?

Mr FELTON-TAYLOR: I can comment upon our operations and I would probably restrict them to those. One of the key elements of what we do and the way that we do it differently is that the forests are managed over two to three rotational lengths, and that is quite crucial. The way that our particular forests sit within the landscape is very important. We have to show that we have done analysis of where they sit within the landscape—the greater landscape, so the neighbouring properties—that we have accommodated for a management plan which enables wildlife to move through our property. Now that does not necessarily mean excluding logging, but it does mean in those areas that the management operations will be significantly reduced or at least specified towards enabling that movement of animals through the properties.

So it is about looking in a holistic sense across the landscape. We do a lot of work around thinning of our forests. Thinning, I have touched on it before but it is probably one of the crucial elements with the sustainability of our native forest sector moving forward. It helps the trees to maintain resilience going into these more extended periods of dryness and drought by simply giving the retained trees more water, more nutrient, which just makes them a healthier tree. You can visually assess trees and you can see it all the time in overstocked trees because when trees get stressed in drought it affects their sap flow and this makes them more prone to insect attack. That is one of the first visual assessments of forests under stress. This obviously has ramifications for their nutrient levels and obviously ramifications for species such as koalas. So these are all the different types of issues that we are dealing with in our management to address those issues.

Mr JUSTIN FIELD: Thank you. My time has expired.

The CHAIR: Thank you, Mr Field. I will go to Mr Paull to start off with. We have heard a lot of submissions and a lot of evidence talk about the need to end native forest logging. Is it more of a case, in your opinion, that we just need to increase the level of certification across native forest logging and get those certified numbers up as a way of managing the forests better?

Mr PAULL: As a standard setter, it is not our sort of position to say what forests can and cannot be logged. Our preference is that any forest that we harvest or manage in Australia is under certification and obviously from my perspective that it is under FSC certification. I think from our perspective FSC has broader support from the environmental movement—so obviously from the World Wildlife Fund [WWF], the Wilderness Society and others. That is because they see the FSC standard as delivering on some outcomes that they do not believe occurs with other certification schemes. If harvesting in native forests was to continue, we know that there is a broader support from the environmental movement that it be done under FSC certification, and I think you will see that in the WWF's submission. I think they make that point pretty clear, and we have seen it demonstrated by other environmental movements that if harvesting was going to continue they would prefer that it was done under the FSC system.

The CHAIR: Just picking up comments from a previous answer, or it might have been in your opening statement, you spoke about ecosystem services procedures. On notice, would you be able to provide the Committee with a copy of those procedures?

Mr PAULL: Yes, definitely.

The CHAIR: Excellent. Thank you. I will go to Mr Felton-Taylor. In answer to questions from, I think, the Hon. Mick Veitch you said there are a lot of seminal texts available around silviculture. Do you think it is the case that we need to invest in easily accessible and easily digestible education packages for forestry workers around good silvicultural practice?

Mr FELTON-TAYLOR: I think that would be really good. They do exist and they have surfaced from time to time. What I think this sector struggles with is a really frequent changing of focus. So we go from a real push around education—I remember probably 10 years ago, I think, I cannot remember what the department was called at that stage but in essence DPI or LLS were doing a lot of really good engagement with harvesting crews to upskill them around soil, soil/water control issues, silvicultural issues. But, for instance, to my knowledge there has been none done in the last 10 years. So really bringing that information and keeping it forefront, I think, would be of great benefit.

The CHAIR: Are there any good examples of educational packages from around the world or even Australia that do this well that you could perhaps table on notice?

Mr FELTON-TAYLOR: Yes, I can do that.

The CHAIR: Excellent. Thank you. In your opening statement you talked about management plans being sort of great on the shelf and they read well but not in practice. What are some specific things within those plans that you do not believe have been put into practice well or consistently?

Mr FELTON-TAYLOR: It comes back to that notion of the trees that we leave behind. Forestry for too long has been about, you know, look at these great trees, look at this beautiful timber in my deck or on my floor. Contractors, I think, really are the meat in the sandwich in this whole industry. They are the ones that are always constantly getting squeezed. They are the ones who are managing weather, they are managing machinery—which is always difficult and it is expensive—and they are the ones who are always being asked to do more for less. Sorry, I got off the topic there.

The CHAIR: That is alright. But it brings up a point I want to go to next and it comes from your submission and also your answers to some of the questions. You talked about this self-thinning concept and picking up on your comments just then about it is the trees that we leave behind, it sounds like you are suggesting we maybe need to alter the mix of logs that we allow to be taken, so it is not just all high grade, there is a mixture, and those incentives you talked about giving contractors incentives to harvest poorer grade trees. If I was to draw an analogy, it sounds like you want to bring it into line with sound animal conservation practices where you actually selectively take out certain genetic examples from a species so that over time you strengthen the genetics of that animal or in this case the tree. Would that be a fair analogy?

Mr FELTON-TAYLOR: Absolutely. We have got to be careful, because if you go back to the science and those seminal texts that I have just mentioned before it is all in there. It is just that when you are in the bush it is a volume game. One of the key physics issues is that if you double the diameter of a cylinder, you cube its volume. As a contractor, you are being paid by volume to remove logs from the forest. So there is this very strong economic argument to take the fattest and the tallest trees in the forest because that is the greatest return for unit of effort. So to go from a 30 centimetre tree to a 60 centimetre tree, you have got to cut down three times as many 30 centimetre trees to make up for the same as that 60 centimetre tree that you are leaving there, and that is obviously three times the amount of work.

The difference between getting one tree down of reasonable comparative size, a 30 centimetre tree to a 60 centimetre tree, is very similar, but obviously they have got to get it out of the bush. There is a person doing that and that just slows the whole process down. So there is this perverse incentive to just keep taking the biggest and best trees. So looking at some way that rewards contractors to actually selectively take some of those poorer formed trees and leave those better trees behind, that is where the silviculture comes in. That is where that management comes, that is with certification.

Mr DORRIES: Yes, absolutely.

The CHAIR: I will pick up on something else you were talking about along those lines of self-thinning. I have read and heard from people in the industry that each species has an optimum growing ability with regard to its proximity to other trees. Is that data essentially compiled or available anywhere for timber operators to look at so they can say, "When I'm managing my forest, I need to ensure that I'm leaving X amount of space"?

Mr FELTON-TAYLOR: There are some basic rules of thumb that work quite well. It depends. The whole issue is complex and so therefore it is very difficult to have generalised rules of thumb that apply across the whole area. If you look at State forests, they have always broken New South Wales into different regions and that tends to reflect some of those, so you could definitely—there could be good regional work done around producing documentation for the regional areas which reflects the species and the site conditions. Site conditions is quite crucial. Here on the coast, mid-North Coast, North Coast of New South Wales, you will get species changing as they come from the gullies up to the ridge tops that reflects that nutrient grading and the water gradient. Whereas once you move over the range into the red gum, they tend to be more lower diversity forests, reflecting that more similar sort of topographical—when you move up to the higher altitudes, once again you do not get the same diversity within a localised area, to my knowledge, but I am pushing out of my area of expertise; mine is more coastal.

The CHAIR: Unfortunately, my time has expired, but I do foreshadow some supplementary questions because this has been very interesting and great. I will throw to the Government. Mr Martin, you have your hand up.

The Hon. TAYLOR MARTIN: I will direct some questions to Mr Dorries from Responsible Wood. Your submission on page 2 states:

1. Continue to provide support for the NSW Local Land Services to establish cost effective systems for the certification of private native forests.

You go further to say that works are currently being undertaken by LLS. Are you able to expand a bit more in regard to that work that LLS is undertaking and what you envision going forward?

Mr DORRIES: Okay. LLS, obviously the codes have been under review. One of the outcomes has been a fairly detailed gap analysis between the private native forest codes and the requirements for certification to identify where the gaps are. Probably the next piece of work would be to find a way, in cooperation with landowners, where solutions could be found to fill those gaps.

The Hon. TAYLOR MARTIN: [Disorder].

Mr DORRIES: So to date there has been work on the codes and a piece of alignment work and a gap analysis.

The Hon. TAYLOR MARTIN: The next point in your submission is in regard to support packages for the certification of private native forestry. I will quote a bit more for the benefit of other participants. It states:

> To show case the economic and technical viability of certification for private native forestry it may be necessary to fund pilot projects.

That is quite an interesting point. Are you able to elaborate a bit more on how that might work and the benefits? Furthermore you say, "These could include pilot projects for 'group certification'".

Mr DORRIES: Absolutely. To make certification economically viable, to a large extent it depends on area. The larger the area, the more cost-effective certification becomes. It is a fairly coarse way of explaining it, but it is fundamentally correct. When it comes to private forest growers, if they can establish collaborative groups, where a group of forest growers were to come together and to operate a combined forest management scheme, with enough scale it is possible then to bring in professional foresters who will assist with the management planning, with biodiversity assessments, some of the monitoring requirements required by certification. I suppose the pilot program that I am thinking is to really provide an incentive for those groups to establish and show that they are actually cost-effective and economically viable.

The Hon. TAYLOR MARTIN: In the closing paragraphs of your submission you state:

> There is significant opportunity to increase both the quantity and quality of forest products originating from private native forests through improved education and training.

You continue:

> Recent research indicates that the opportunities in this area have potential to increase resource availability several fold. A small investment in education has potential to deliver sizeable economic benefits.

Mr Dorries, that is quite a big claim, to say it could increase resources several fold. Are you able to expand a bit more on that? That is quite exciting.

Mr DORRIES: As Mr Felton-Taylor has already explained, silvicultural practices, so appropriate thinning, the ceasing of the high-grading processes where the remaining trees are of low quality. It will improve not only the quality of the trees themselves but also the productivity, but it is a long-term investment in education, so the decisions that are made around thinning really do not have an economic return for, oftentimes, many decades. There has been some recent work done in South East Queensland looking at this topic, and there is—I am just trying to get the right word. It is showing that for a small investment the returns are many, many, many fold greater. One of the challenges of this is to find a market for the thinning residues, though.

The Hon. TAYLOR MARTIN: Fair enough. Would any of the other witnesses like to expand on anything raised here?

Mr FELTON-TAYLOR: If I might?

The Hon. TAYLOR MARTIN: Of course.

Mr FELTON-TAYLOR: I agree with Simon that the thinning is one of the crucial elements in terms of meeting supply going forward. As I touched on before there are substantial areas, and we are talking tens of thousands of hectares, of forest which is locked up. It is desperate for a thin. The residues market is part of their story because, obviously, forestry is a costly business. However, I think we better be very careful about looking at the really easy options in terms of the residue market, which is typically seen as the dirty word around woodchip. There are also substantial opportunities within that thinnings area for quite a substantial amount of small-log processing into value-added sawn product.

Mr DORRIES: Yes.

Mr FELTON-TAYLOR: That is an area that requires investment, and investment can be difficult to get from banks because they love lending to you for houses, but if you start talking anything outside of that area they get a glazy look in their eye pretty quickly.

The Hon. TAYLOR MARTIN: Mr Paull?

Mr PAULL: The only thing I would add to that from an FSC perspective is that there is a global focus within our organisation on what we would call small or community forests. Traditionally it has been harder for small growers to access the FSC system. There are group schemes established, and James is leading one of those, to help smaller growers access FSC, which is really about access to market as well. We are in the middle of trialling a pilot. We are proposing to work in northern Australia with an Indigenous community, but it is equally applicable to small growers, where small growers can get, I guess, a reduced effort to commence in the process, and it is an evolutionary system over five years to meet the full requirements of FSC. That process, we expect to be ratified early next year, and that will be available to small growers across the country to be able to access the FSC system in a way that is a series of milestones, if I can call it that, that gets them up to the full standard over a five-year period. We are hoping, from our perspective, that that will give an incentive to private or small growers, a way of accessing the FSC system.

The Hon. TAYLOR MARTIN: Thank you all for your input. I really appreciate it.

The CHAIR: That concludes our time with you today. I believe you have taken some questions are notice, and there may be some supplementary questions that come to you as well. The Committee secretariat will be in touch regarding those. Thank you all very much for your time today; it was really insightful. We will take a short break. I remind members to stop their videos and put themselves on mute.

(The witnesses withdrew.)

(Short adjournment)

ALISON RUDMAN, NSW District Assistant Secretary, Construction Forestry Maritime Mining and Energy Union, affirmed and examined

SHARON MUSSON, NSW District President and Tumut Delegate, Construction Forestry Maritime Mining and Energy Union, affirmed and examined

DAVID WEBB, Tumut Delegate, Construction Forestry Maritime Mining and Energy Union, affirmed and examined

PETER ERRINGTON, Illawarra Delegate, Construction Forestry Maritime Mining and Energy Union, affirmed and examined

The CHAIR: We will start the next session of day two of our inquiry into the long-term sustainability and future of the timber and forest products industry. We welcome representatives from the Construction Forestry Maritime Mining and Energy Union [CFMEU]. Would any of you like to make a short opening statement on behalf of the CFMEU?

Mr WEBB: Yes. My name is David Webb. I am a delegate from Tumut, AKD timber. I am a father of four. The timber supply issues from the bushfires have seen our mill go from two shifts to one shift, taking skills away from the town and also taking other skills with them. For example, my wife is a midwife at Tumut hospital. They have a new hospital opening in a couple of months, but they have limited staff as it is, and they fear if more leave they will lose services. Also, my daughter is in year 10 and is currently choosing her HSC subjects. With less kids, it means less subjects. She would like to be a scientist but she cannot choose things like physics or economics because there would not be enough kids for the class. Over to you, Peter.

Mr ERRINGTON: I am Peter Errington, the delegate for Wollongong, frames and trusses. Due to the recent timber shortage, production at our truss and frame factory has slowed to approximately 50 per cent, which has resulted in loss of hours and job lay-offs. This would also impact the jobs for tradies and so on for the building and finishing of these houses within a number of major housing developments from a distance of 30 minutes to an hour and a half and the far South Coast from our factory. On to you, Alison.

Ms RUDMAN: Underpinning all of these issues is a lack of coordination both between government departments and between levels of government. What it means that we hear is, particularly from our members in the hardwood sector, they often have a log truck by the side of the road, the Environment Protection Agency [EPA] on one side, Forestry on the other side, and meanwhile no logs are getting into the local mills and workers are being stood down. Over to you, Sharon.

Ms MUSSON: My name is Sharon Musson. I am a delegate from the AKD timber mill in Tumut. I have worked on the timber production line for over 24 years. This is show-and-tell. I would like to show you: this is a radiata pine. Millions have been planted since the bushfires burnt out the forest nearby. Now the blackened hills are giving us promise and hope for the future generations. This is the size of the pines when they are planted. But how long will it take before they become mature enough to be harvested to use in the timber industry? Well, at least 25 to 30 years, depending on the weather, the rain, the sunshine and environment. What will be done to secure the jobs in the waiting time? In the mill where I work, there are many families who have multiple members working in our mill. My husband, Greg, is in the maintenance department, so we both work in the same place. I think of the financial impact of jobs if they are reduced because of the shortage of the timber. As people sometimes have already—see the uncertainty, are leaving now, moving elsewhere, so they are taking their skills and their knowledge with them. Please realise how this affects the small towns. We do not want our town to be a ghost town. That is the end of our opening statement. Any questions?

The CHAIR: Thank you for that wonderful opening statement that combined all of you; that was great.

The Hon. PETER PRIMROSE: I will begin where the opening statement ended, with Ms Musson. What should the New South Wales Government do to address both the short-term and long-term log supply issues that you mentioned?

Ms MUSSON: Short term, definitely redirect any logs that would be exported out of Australia to go overseas. Keep them in Australia; let us process these logs. And also, because they could be from anywhere in Australia, assist with the freight, the long-distance hauling of these logs. Also, optimise the log sizes; make sure that the large logs do go to timber mills and the short logs go to where they can be chipped or put into panels, cardboard et cetera. They are very important. That is the short term. Long term, we need a plan of continuing to plant our plantations out, so make an incentive for even private landowners to put these forests in; plant for a future. Give them incentives because even the carbon credits must be something that is appealing on both sides

of the argument as well. As far as I am concerned, we have a long term and a short term, and we need to address both. Thank you.

The Hon. PETER PRIMROSE: Can I ask Ms Rudman a similar question but maybe in relation to wood supply for hardwood mills. Do you want to comment on some of those issues please?

Ms RUDMAN: Absolutely, thank you. Underpinning all the issues that we see, particularly in the hardwood sector, is a lack of wood supply, and this was only made far worse by the fires that we saw in 2020 that devastated a lot of these towns. It is not helped by a lack of coordination between the levels of Government to make sure that the right wood is going to the right places. We do know that one of the things that often comes up in the hardwood sector is people want to talk about the environmental impacts. We want to be really clear that we live in these towns, we care about the environment in these towns, but we want to make sure that there is a future for people, not just places and things. There are ways to harness the environmental benefits of the hardwood sector and the benefits that they bring to the building supply chain. That is why part of what we are calling for is an innovation fund, to make sure that there are good jobs available that are able to do that because ultimately our union has always supported triple bottom line sustainability. That means an industry that is environmentally sustainable, that is socially sustainable and that is also economically sustainable.

The Hon. PETER PRIMROSE: I will go to Mr Webb. You mentioned the issue about the problems of raising families in this time of great uncertainty in towns. What are some of those problems and what should happen about those uncertainties?

Mr WEBB: Some of the problems like I mentioned, people moving away and taking important skills with them, like my wife. The hospital needs everyone they can get up there at the moment. She is a midwife, she likes doing midwife things, but she has been driving all the way to Wagga to do shifts because there is no maternity getting done in Tumut at the moment. If the timber industry was to get any worse here, we would probably just take our whole family over there to Wagga, which we really do not want to do because we have been here forever.

The Hon. PETER PRIMROSE: Are there particular worries you have regarding your children and their experiences, for instance, with schools and education? What is happening there in the community?

Mr WEBB: If the class sizes get smaller, there are less subjects. We have had the discussion about whether we should send her to boarding school or not for a better education, but we would really prefer it if she just stayed in town here.

The Hon. PETER PRIMROSE: I will go briefly to Mr Errington. I note you are in the frame and truss industry. What are the problems occurring there at the moment and what should happen about it?

Mr ERRINGTON: At the moment, from a [inaudible] point, when we get a job it actually has to be quoted first before we actually get the job, which can take anywhere up to, say, three months. Then if we do actually get the job, the turnaround time from coming out of the office from being detailed to where it has got to be on site is approximately three days. If we haven't got the timber in stock to actually do that job within the three or four days, we are waiting on timber and it takes longer, so then we are not fulfilling our side of the contract to do that work. We just need a little more consistency in timber supply to make it a little bit easier on us to keep everyone in the industry happy. That is basically all I can say about it, is the supply of timber is our issue.

The Hon. PETER PRIMROSE: I would like to ask any of the witnesses about recommendation 3, which is that the NSW Government establish and support a NSW Forest Industry Advisory Council. Can you talk about who would make that up and what it would actually do?

Ms RUDMAN: Yes, absolutely. Thanks for that question. The purpose of that really goes to this issue of coordination. We believe that there needs to be one point person who is coordinating between the departments and coordinating between the levels of government and that they need to be advised by a forestry industry advisory council. That industry advisory council needs to include key stakeholders; it needs to include unions; it needs to include employers; it needs to include those key departments that are involved in the process as well as, obviously, our key skills bodies like ForestWorks. The purpose of that would be to make sure that we are really capturing the expertise and knowledge, and that we are breaking down some of those silos that I believe you heard about yesterday that get in the way of a better functioning timber industry. The other thing it would also let us do is make sure that where there is knowledge we are not drawing on, like Indigenous cultural knowledge about how we manage forests, we are able to make sure that that expertise is captured as well.

The Hon. PETER PRIMROSE: I would assume that you would be able to draw on other knowledge. For example, local councils in relation to effects of rural and regional bridges, and problems about log trucks being able to go over them and all of the problems that that would mean?

Ms RUDMAN: That would definitely allow us to just stop some of those logjams happening in a really efficient way.

The Hon. PETER PRIMROSE: Thank you. That is enough for me.

The CHAIR: I will throw to Mr Field.

Mr JUSTIN FIELD: Thank you all for your attendance today and for your submission. I am not sure who can best answer this question. It might be you, Ms Rudman. What percentage of CFMEU members are in the hardwood sector versus the softwood sector?

Ms RUDMAN: I would have to have a look at the exact figures, but I would say that there are less members in the hardwood sector than the softwood sector, in part because of where the work is performed and the history of that work.

Mr JUSTIN FIELD: If you could take that on notice and come back with any details, that would be really useful. But I would be right in making the assumption that it is significantly less; in reality, it is probably quite a small proportion of your members?

Ms RUDMAN: As I said, Mr Field, I understand that it is less. In terms of the level of detail I can provide about that, I will just need to check what our rules allow me to speak about, but I will certainly take that on notice and respond with what we can.

Mr JUSTIN FIELD: That would be great. I asked this question earlier of Bunnings and Boral, who suggested that the softwood mills were operating at near capacity, possibly up until recently, and in part that was because of the substantial amount of salvage logging that happened in the 12 months after the fires. Could you comment on whether or not that is your view? I think I heard someone say that one of the mills was maybe down at 50 per cent capacity at the moment. I am trying to get an understanding of how much that is because of local shortfalls versus increased demand that we know is happening at the moment and also any loss of imported materials or delays in imported materials that have been coming in.

Ms RUDMAN: I think that it is probably a combination of all three. I would note that where we have seen a change in the working patterns of our members, those changes have happened recently and have coincided with the end of the salvage operations. A lot of that salvage wood was able to be processed for longer than those who were around for the last lot of really major bushfires necessarily expected would be possible, but there definitely is an issue when you look somewhere like from where Dave and Sharon come, where close to 60 per cent of the resource is now not available. There is a real problem there. They are down to that one shift, and obviously our concern is what that means for both local jobs and local communities that rely on those jobs.

Mr JUSTIN FIELD: The very harsh reality is that it is going to take 20, 30 years for the levels of softwood supply at the domestic level to return in New South Wales. The things that you have suggested are good, but that will not make the trees grow faster. So what do you see as the stopgap to be able to continue operating?

Ms RUDMAN: Ms Musson spoke earlier about some of those opportunities, and I think there were really three things that she drew attention to. The first was, of course, making sure that where there is stuff that can be freighted, where there is stuff that has been grown elsewhere, making sure that that is able to come to New South Wales. I know some of the reports that I have had from employers is that there is supply, for example, in Western Australia that is not being utilised. That is available to them, but those freight costs are quite expensive. She also spoke about the materials that are currently being exported that can be redirected. I note that some of that has occurred recently; obviously not at the level that protects the type of jobs that we would like to see.

The third thing that we have spoken about is the need to be innovative and to think about what expertise is out there in the industry because, just talking with our delegates, some of them point us to things that they used to do in order to maximise the use of wood around finger—I am going to use the wrong term, Ms Musson, so feel free to jump in—but finger connections and that to make sure that some of that smaller wood is able to be fully utilised. We think there is a body of expertise out there that is not being drawn on right now, and that is what something like a forestry industry advisory council would allow us to do, to actually bring the people who know how to get the most out of those logs together, clear all the barriers and actually make sure that there is the best chance possible for this industry that one too many towns are reliant on. So we cannot afford to let go.

Mr JUSTIN FIELD: Thank you. I think my time has expired.

The CHAIR: It has. I will start with you, Ms Rudman, and ask you to take this on notice. In your submission you talked about regulatory creep. On notice, could you come back to us with some examples of some recent regulatory creep within the timber industry that has actually hurt the industry?

Ms RUDMAN: Yes, Chair, I will.

The CHAIR: Thank you. Just picking up on Mr Primrose's questions around the advisory council, am I right to assume that you would want that formally legislated, like a statutory body, so it cannot be weakened or slowly undermined by Ministers of governments of the day?

Ms RUDMAN: We would want to see that given as many protections as possible so that we make sure that what is respected is the role of that advisory council and obviously, for us, the role of people like Mr Webb, Mr Errington, Ms Musson in bringing their expertise to that table.

The CHAIR: I will throw to Mr Errington, as a fellow Wollongong boy. Can you talk to us about what impact this is having in terms of pushing out the building of houses in the Illawarra, south-west Sydney and the South Coast because of this shortage? What are the delays in getting housing built?

Mr ERRINGTON: Apart from the fact that there is a bit of a boom around the Wollongong area at the moment—we have got developments at Kembla Grange, Wongawilli, Sussex Inlet and further down the coast. We are on tail end of the Shellharbour development, which has been ongoing for a few years now; the West Dapto, obviously. As I said earlier, the time frame that we have got to actually build these frames and houses—I cannot speak for any other truss and frame mob—we have not got the stock on hand to build these frames and trusses in a time period that we are allowed. If we can get a little bit elusive supply so we have got that little—it is only a small margin of stock that we need, but if we can just get a little bit more, the impact would be great. It would be great. We can fulfil our contracts and keep a lot of other people happy.

The CHAIR: I will throw to you, Mr Webb. Picking up on Mr Primrose's comments about schooling, obviously you do not want to send your daughter to boarding school. In a town such as Tumut and other small towns, there is nothing really clever that schools and education departments can do, is there, in terms of moving a kid temporarily to another school to do that one subject. Once the numbers drop to a certain level, there is really nothing clever that can be done.

Mr WEBB: No.

The CHAIR: It is purely numbers.

Mr WEBB: Yes. They had a thing there that you could fill out. If enough kids wanted to do the physics they would run a class, but I think they have only got a couple of kids that wanted to do it. With more kids comes more people that want to do it, I guess.

The CHAIR: Yes, that is right. It is purely a numbers game.

Mr WEBB: Yes.

The CHAIR: I will throw back to you, Ms Rudman, or you, Ms Musson. In your submission, recommendation 5 recommends that there be an expert review of hazard reduction regimes across different forest tenures. Am I right to assume that you believe that the current hazard reduction regime or how it has been done in the past was not adequate? There has obviously been an attempt by witnesses to blame increasing bushfires solely on timber operations. I will get your comment on those statements by witnesses, but also are you saying that the current hazard reduction regime is not adequate across tenures?

Ms RUDMAN: Thanks for that question. I think there are two points that are really key to be clear on. First of all, we do not accept the science. We do not think that the science says that hazard reduction is linked to timber clearing. We would not accept that point at all. However, we do think part of the problem that we have, particularly in New South Wales, is that a lot of the data on how hazard reduction is performed is really opaque. We think that there needs to be a really clear and really transparent review of what are those hazard reduction regimes, what data are they based on, and what do we need to be doing to put us in the best possible position for the future.

The CHAIR: Ms Musson, do you have anything to add?

Ms MUSSON: No, I wholeheartedly agree with what Alison has just said. Anyone that is in a fire, it is the most frightening thing in the world.

The CHAIR: Yes, thank you. My time has expired. I will throw to the Government if they have questions. Mr Farraway?

The Hon. SAM FARRAWAY: My apologies. I came in a couple of minutes late because I had a printer malfunction while trying to print off some stuff, but it did not work. I note that we do not have Mr Mathias today, the Oberon delegate. I am sorry if I missed this; he was meant to be here today?

Ms RUDMAN: There were some technical issues with how many people we could have on the line at once, so Mr Mathias is happy—I believe you might be looking at doing some Oberon hearings at some point?

The Hon. SAM FARRAWAY: Okay.

Ms RUDMAN: Mr Mathias looks forward to speaking to you then.

The Hon. SAM FARRAWAY: That is good. I live in Bathurst, so I know a bit about Oberon and know a lot of people who live in Oberon. I was going to ask, Ms Rudman, if you want to briefly expand on my question around Oberon. I want the CFMEU to highlight on their members' behalf the significant contribution that the forestry industry makes to the Oberon economy and community. If you want to touch on it, it is certainly something that I might expand with Mr Mathias if and when we go to Oberon.

Ms RUDMAN: Absolutely. I would welcome the opportunity. For us, as a union, just Oberon alone, let alone the smaller mills once you start to get into Bathurst, represents 470 families; that is 470 families who rely on those mills. You have got two big mills up there. You have got both Highland Pine Products, which is a joint venture between what was Boral and now Pentarch and AKD, and then you have also got the Borg plant up there as well. Those 470 families really are the economic lifeblood of that town, as you would well know. Everything that exists in that main street, down to what time that servo is open until, is timed around the times of that shift. I have eaten dinner more than once outside of that IGA because I have messed up the timing of that.

We know that those families do not have a lot of other options. There is not a lot of other work in Oberon. If those mills were to even have to reduce, even if they had to halve and go down to less shifts, if 200 families were to leave that would have a critical impact, not only on them but upon every single business that currently operates in Oberon. You also have a number of smaller mills in Bathurst proper, and they are doing really, really critical work, particularly critical work around some of our major infrastructure projects. To think that those families might not know what their future looks like is something that we cannot stand by and accept.

The Hon. SAM FARRAWAY: Thank you, I appreciate that. I want to touch on a point that I think Mr Errington made in an answer before. In the earlier session with Boral and Bunnings, I asked a lot of questions about their industry point of view. I am happy to expand on this from the answer you gave, and that was around the building boom, which I think you said was down in the south and the Illawarra. What I have learnt through asking questions in and around the forestry industry and through this inquiry, is that the global demand is one thing. Obviously when we look at the domestic demand, whilst the Illawarra has a boom—as you said, Mr Errington, like the Central West does, and up and down the east coast, the whole country is obviously booming. From the CFMEU's point of view are you finding the same thing across all States? That is, the builders' trade and stakeholder organisations would normally say that one State would be booming whilst another one would be lagging, but they have never seen before every State in the country with a domestic boom in building new houses, so trusses and frames. Then you add, obviously, the impacts of the bushfires and some other issues within the industry. My point is, is the CFMEU finding in other States as well that there is a huge domestic supply shortage, and that is because all States have a housing boom at the moment?

Mr ERRINGTON: At the moment I cannot honestly speak for any other State. I can only speak for our region at the moment, but I can take that on notice and try and get to Alison and get further information through to you. But at the period, our time is struggling with timber for our general area. The rest of the State and the rest of the other States, I cannot comment on. I am sorry.

The Hon. SAM FARRAWAY: Ms Rudman, you would probably have more of an idea, at least, firstly, in the State of New South Wales what the overall supply is in terms of the housing boom. In your dialogue within the CFMEU, you would have to be finding that this is almost a nationwide issue, isn't it?

Ms RUDMAN: We are seeing that there is this demand nationwide and we are not seeing this demand let up, and we are seeing it really consistently across the board.

The Hon. SAM FARRAWAY: Are there any other comments from other participants on that question?

Mr WEBB: Nothing from me.

The Hon. SAM FARRAWAY: Moving on, I also raised with earlier witnesses today the softwood industry. I want the CFMEU's thoughts on the announcement from the Deputy Premier and Minister, who is responsible for the forestry portfolio in New South Wales, in and around the China trade embargo. I think it was on 17 September that Forestry Corporation directed 270,000 tonnes of timber back into the domestic supply chain for New South Wales. What has that meant for your members and in some of the feedback you have got from members across the State?

Ms RUDMAN: We welcome that announcement by the Government. Obviously anything that puts timber back into the supply chain is really critical for jobs. You look particularly around the Tumut and Tumbarumba area where there has been such a massive downturn in what is available to them, this is a very real thing that our members are concerned about. What we would note, though, is that where we do see exports being

redirected, it does need to go hand in hand with a plan about how we are going to actually get those exports to those towns where that processing work can be done. So we see it as a really necessary first step, but it is just that, a first step in securing this industry.

The Hon. SAM FARRAWAY: If there are no other comments or answers to that, they are all my questions. I will throw to my Government colleagues, if they have any questions.

The CHAIR: It looks like that is no. Thank you very much to the witnesses for taking the time out of your day and for giving us some valuable insight. I believe you have taken quite a few questions on notice. The Committee secretariat will be in touch with details of how to get them back to us. The Committee will break for lunch and resume at 1:15. I remind members to turn off their videos and mute their microphones.

(The witnesses withdrew.)

(Luncheon adjournment)

BRENDAN MACKEY, Director, Griffith Climate Action Beacon, Griffith University, affirmed and examined

PHILIP GIBBONS, Associate Director of Higher Degree Research, Fenner School of Environment and Society, Australian National University, affirmed and examined

DAVID LINDENMAYER, Professor of Ecology, Fenner School of Environment and Society, Australian National University, affirmed and examined

The CHAIR: Welcome to the afternoon session of day two of the inquiry into the long term sustainability and future of the timber and forest products industry. We have with us three academics: Professor Brendan Mackey, Professor Philip Gibbons and Professor David Lindenmayer. Would any of you like to make a short opening statement before we proceed to questioning? Professor Mackey, could you take yourself off mute if you are giving a statement?

Professor MACKEY: Yes, I can give a brief summary statement. My first comment is that if you look at the Australian Bureau of Statistics, they tell us that 88 per cent of Australia's wood supply is sourced from commercial plantations, yet these are only 1.5 per cent of the total forest area for Australia. In New South Wales the figure is 86 per cent. For me, it is clear that the future of the industry, which I agree is a most important one for Australia, resides in plantations and related manufactured wood products. Following from that, I think it is very important when we are talking about the economics of the forest that we talk about the total economic value of native forests, based on all their ecosystem services. This includes their role in carbon retention, clean water supply, ecosystem tourism and biodiversity conservation, amongst others, which have been found to have a greater aggregate economic value than extractive values alone.

In terms of big, new, external influences for the timber and forest products industry, it is climate change in terms of both mitigating greenhouse gas emissions and managing the escalating risks of a rapidly changing climate, especially climate-forced or -attributed worsening fire weather conditions. The Intergovernmental Panel on Climate Change's recent report made it clear that deep and rapid cuts in greenhouse gas emissions are now needed to avoid crossing the 1.5 degree global warming threshold, and a significant contribution to Australia's mitigation efforts can be made from the conservation of native forests, as this will do two things: It avoids emissions from the logging that would otherwise occur and enables ongoing removals of atmospheric CO2 by the natural forest growth. A second key mitigation point is that burning forest biomass for energy is not carbon neutral; it is actually highly emissive, mainly due to the lag between the emissions and the regrowth, with the resulting accumulating stock of carbon in the atmosphere.

Two final quick points. Human-induced climate change has already significantly increased dangerous fire weather conditions, which means that catastrophic wildfires have become, and are projected to be, more frequent, severe and of longer duration, especially for south-eastern and southern Australia. This has implications for forest management. I think managing the increase in wildfire risk from climate change is best served by targeted prescribed burning to reduce fuel reduction in the close vicinity of assets. I think the risk to wood supply that this brings can be most effectively managed by focusing fire management resources and actions at plantations. Thank you, I will stop there.

The CHAIR: Thank you. Professor Gibbons, did you have an opening statement?

Professor GIBBONS: Yes, thank you, and I apologise. I sent a written version of this late; I apologise for that. COVID has really barrelled us in terms of teaching. I am just laying out the train tracks as I go at the moment and really struggling. Look, a few key points: First, I have to declare that I am also an expert adviser to the New South Wales Natural Resources Commission [NRC]. I am going to focus on implications of item (g) of the terms of reference, which is environmental impact and sustainability. That is where my expertise lies. It is important to note that timber harvesting in New South Wales forests is cumulative.

You have got to look at multiple harvesting events over time and space. Harvesting is associated often with slash burning, and that is cumulative with climate change, as Brendan Mackey said, and additional wildfires. The key impact, in my view, of timber harvesting on native wildlife relates to changes in forest structure. Communities often have problems with timber harvesting because of its impact on old-growth forests and hollow-dependent fauna. In a recent large study undertaken by the Natural Resources Commission 61 native plant species and eight fauna species were sensitive to loss of old-growth forests or loss of hollow-bearing trees—very old, mature trees in forests.

With regard to fire there is no evidence that timber harvesting affords communities greater protection from fire than other land tenures, and I am happy to elaborate upon that later. With the recent 2019-20 fires, Forestry Corporation of NSW—you are probably aware of this—predict up to a 30 per cent decline in high-quality logs over the next 30 years. The implication of that is that it places a lot of pressure to intensify harvesting in the

forest estates still available to them. With climate change, there is a study at the moment that is in draft form that indicates, suggests or predicts that climate change has a negative effect on the majority of fauna that they looked at. Through forecast increases in fire severity and fire frequency, climate change will exacerbate the effects of logging on the loss of those key mature forest structures such as very old trees.

Finally, there are four things that I would recommend; that is, that a greater number of hollow-bearing trees and potential hollow-bearing trees are retained in net harvest areas to make forests more resilient to increasing fire frequency and severity. I would say that we need much more long-term monitoring. As I said, we cannot make many firm statements about the long-term impacts of harvesting in New South Wales on New South Wales wildlife because of the lack of long-term monitoring. I think forests in New South Wales need to be managed not on maximum sustainable yield but at a sustainable yield well below maximum so there are opportunities for adaptive management and conservative responses to large events like the 2019-20 fires. Finally I would say that Forestry Corporation of NSW really should be seeking certification from the Forest Stewardship Council [FSC]. Thank you.

The CHAIR: Thank you. Professor Lindenmayer, do you have an opening statement?

Professor LINDENMAYER: Yes, I do. My statement is based on my last 38 years of research on long-term work in forests, and I make some really key points. The first one is that we now have definitive evidence, based on the analysis of the 2019-20 fires, that logged forests always burn at higher severity than intact forests, and that is irrespective of fire weather. We have analysed the fire footprint across New South Wales and Victoria, and the data are unequivocal. In fact, there are times when logged forests at low climactic conditions—that is, low fire weather—burn at greater severity than unlogged forests at extreme fire conditions. The data are compelling that under all fire conditions logged forest burns at higher severity. That paper has just been resubmitted for publication in one of the world's leading journals. It is a pretty serious statement about the fire burden that is occurring in native forests in New South Wales and in Victoria.

The other thing that is really important is that many areas of forests are now burning repeatedly. The effect of recurrent fire is that some kinds of forest will simply be unable to grow old enough to grow sawlogs. This is particularly in the high-value ash forests, where recurrent fire will essentially lead to an 80 per cent chance the forests will burn before they get old enough to produce sawlogs. The other thing that is really important is that it is often touted that thinning forests will reduce fire severity. We have now done the empirical analysis of that, both in the 2009 fires in Victoria and the 2019-20 fires in New South Wales and Victoria, and thinning either has limited effect or actually increases the probability of high-severity fire.

The fourth thing that is really important here is that post-fire logging—so this is logging in burnt areas—is the most damaging form of logging in terms of its impacts on soils, its impacts on biota and its impacts on aquatic ecosystems. There is a vast literature on that that we have reviewed. The fifth thing that I think is really important is to look at the economics of what has been happening, particularly in southern New South Wales. When you look at the forest industry it is very important to break it apart. It is really two industries: It is a native forest sector and it is a plantation sector. The latest economic analysis that I have seen indicates that the hardwood division of the Forestry Corporation is a marginal entity at best and is often loss-making, whereas the plantation division is actually quite productive and economically sound. If you do the analysis of this—and I have seen the analysis that has been done by others—there is a strong benefit-cost ratio of actually taking the Forestry Corporation out of native forests, particularly when you think about the carbon abatement potential.

The carbon abatement potential is more than one million tonnes of carbon abatement per year. The analysis that I have seen indicates that that is about five times bigger than the next carbon abatement project currently in New South Wales. You can see that this is potentially a very important economic stream and income stream for the State of New South Wales by changing the way that native forests are looked at. In summary, there are issues to do with fire severity. There are issues to do with thinning. There are issues to do with the economics of the industry itself and the benefit-cost ratios from economic analysis that is done in this space. Thank you.

The CHAIR: Thank you, Mr Lindenmayer. I will throw to the Opposition. I believe it is Mr Veitch.

The Hon. MICK VEITCH: Thank you, Chair. I might actually start with Professor Lindenmayer. That research you were just talking about is pretty fascinating. I live in Tumut, so I am pretty aware of the fires that occurred there last year. One of the issues I have is that particularly in the harvested forests it appears that the weeds grow back a lot quicker and with a great deal of density; therefore, they add to the fuel load. Did your research pick up anything at all around the contributing factor of weeds to the fuel load in these forests?

Professor LINDENMAYER: No, we have not. I have worked in the Tumut plantations since 1994, including the Nanangroe plantations to the north, and I know that the 70,000 hectares of pines in the Tumut area also comes with 69,000 hectares of blackberries. We have not looked at the fuel load issue associated with

blackberries. But what we do know is that most plantations are relatively young and that is when we see the highest fire severity patterns in native forests, but also in plantations. The advantage of plantations is that you can get a crop much more quickly from a plantation.

The first thinning is at about 14 or 15 years; the second one, about 20; the final clear-fell about 24 to 25. You can get three crops in that time of different outcomes. Whereas in a native forest, if you are going to grow sawlogs, basically your forest needs to be about 80 years plus to produce a sawlog. The other advantage of plantations is that plantations, if well-managed, are more defendable in terms of high-severity fire, relative to native forests. The plantations are more lucrative in terms of employment and in terms of return on investment, more defendable and better able to be better managed in that context, in my opinion.

The Hon. MICK VEITCH: Thank you. Just for the record, I shore at Nanangroe many, many years ago, before it became pine forest. I want to move on to Professor Gibbons and your submission. You suggest at the very end that Forestry Corporation of NSW should seek FSC certification of its operations in native forests. Can you detail to the Committee just what the advantages you see would be of such an action?

Professor GIBBONS: The Forest Stewardship Council is the gold standard for certification of the timber industry globally. Wesfarmers have said that they will not take, through Bunnings, timber in disputed forests—that is, not FSC-approved. They see that as gold standard. Forestry Corporation of NSW does not have FSC certification, as I said. It really does assist with a social licence for timber harvesting in native forests in New South Wales. I do not know if there is anything else I could add there. Professor Lindenmayer has had some experience with FSC certification as well.

The Hon. MICK VEITCH: I would be keen to hear Professor Lindenmayer's views.

Professor LINDENMAYER: Certainly the way that FSC is structured, through the environment chamber and the economics chamber and the social chamber, aims to create more social licence to operate. I know that many parties are now looking at certification of plantations because there are ways to design plantations so that they meet other values. Victoria and Tasmania have both had enormous problems with FSC certification because there are deep, underlying problems in both jurisdictions. One of the limitations of FSC is that it does not take into account carbon emissions and climate change as part of its structure at the moment, so there is some work to be done in that space. I would see that the real future in New South Wales moving largely towards a plantation sector would be to think about the management of those plantations so that they would fit with FSC certification.

The Hon. MICK VEITCH: Thank you. Earlier today we heard some, in my view, fascinating evidence regarding silviculture practice and what have been the failings in New South Wales around silviculture practice—but, going forward, the need to change the management, particularly in our State forests. Do you agree that there have been failings in the past with the silviculture practice in New South Wales and that we need to change?

Professor GIBBONS: Look, there are many components to silviculture practice. From a wildlife perspective, and this was outlined in my statement, what has happened with silviculture practice in New South Wales—for example, one of the conditions under the Coastal Integrated Forestry Operations Approval [CIFOA] is that hollow-bearing trees, which is this key habitat resource for around 100 species in New South Wales, is being driven down in the net harvest area in New South Wales forests. Current conditions only see 5 per cent to 8 per cent of the net harvested area in which hollow-bearing trees are retained. They are retained outside that area, but there is no replacement once they are lost. Our work has shown that we are seeing a decline in this critical habitat structure across much of New South Wales' forests. That is an indictment on silviculture in that it is not managing those forests in a way that is consistent with the requirements of a whole range of fauna in those forests. In that sense I think it is a failure. I do not know if there is anything specific about New South Wales silviculture practice that you want me to refer to.

The Hon. MICK VEITCH: I am keen to get people's views on that aspect of the evidence we have heard, and I would like to test it. Professor Mackey, have you got anything to add or say about this?

Professor MACKEY: I think it does have to change for the same reason that everything we do in terms of land and forest management has to change: because the climate has changed. One of the main respects in which it has changed has been the increase in dangerous fire weather conditions. There has been a significant increase in dangerous fire weather conditions actually since the 1970s. We all know this; that is why in the 1990s we got an extra fire danger warning of "catastrophic" fires. That is because the Forest Fire Danger Index was calibrated against the most intense fires of the time back in the 1970s and it went from zero to 100, and in the 1990s you started to get values above 100.

We know from our research from the Black Summer fires that there were days where there were values over 150. One reason why silviculture practice has to change is because the climate has changed, and the increase

in the frequency—we have had 1.1 degree of global warming. Climate change is not something for the future; we have had 1.1 degree of global warming since pre-industrial levels. We have seen, depending where you are in Australia, five to 25 days more a year of increase in dangerous fire weather conditions. That is predicted to continue. That has an awful lot of implications for many aspects of forest management and silviculture, including its effect on models of wood supply and the feedback to silviculture practices. Thank you.

The Hon. MICK VEITCH: Thank you. Before I hand over to my colleague Mr Primrose, Professor Lindenmayer, could you add to this?

Professor LINDENMAYER: Yes, I can. I agree totally with what Professor Gibbons was saying about the large old tree component of forests, which is critical for many reasons, including the ability of forests to regenerate naturally through seed supply and natural regeneration. But let's park that to one side. One of the things that we have seen from silviculture over the last 60 years in southern New South Wales and in north-eastern Victoria is a marked change in the composition of the forest. In southern New South Wales we see a shift towards a tree species called silvertop ash.

Silvertop ash is essentially a fire weed. After intensive harvesting operations, such as in the Eden woodchip concession area, silvertop ash comes up en masse. Silvertop ash responds strongly to fire, so it is benefiting from fire. The flip side is that it is not only adding to the flammability of stands—and we now have data on this—but silvertop ash is inedible as a tree species for animals like koalas and greater gliders. We see extensive areas of forests that have now had their tree species composition radically altered are now largely glider and koala deserts. The compositional change of the forest through repeated silviculture is a real problem. Silvertop ash is a tree species that is used extensively in the woodchip industry but it really changes the forest in ways which are highly detrimental to wildlife.

Not only are we seeing less in terms of the hollow use for animals, but we are now seeing the nutrient landscape, if we want to call it that, also dramatically changed. That is one of the reasons why the koala has declined so dramatically in southern New South Wales and in north-eastern Victoria, but now the greater glider is declining even faster in many places as well. Silviculture is going to have to change to take into account not only changing climate, as Professor Mackey was talking about, and the changing fire regimes that we have talked about, but also the need to support the habitat requirements for some of these threatened species.

The Hon. PETER PRIMROSE: I will ask one question and address it to any and all witnesses who would like to answer it. Yesterday we heard from Timber NSW, and I will just read out one of their recommendations on page 135. It states:

> With 88 per cent of public forested land reserved from native timber harvesting, operations have become concentrated in some local areas. This has opened the government to criticism from local communities that it is supporting the intensification of harvesting. Allowing timber harvesting to have 'a lighter touch' across a larger area by integrating forestry with the management of forests more generally, along with clear communications campaigns, would address many genuine community concerns. Such an approach could also help protect the forests from future catastrophic bushfires. For this to occur the NSW government needs to discard its siloed approach to forest management and to embrace tenure neutral principles.

I was just wondering if anyone would like to comment on that, please.

Professor LINDENMAYER: I am happy to talk about some of those issues. I heard the same kinds of discussions in the 1970s and 1980s regarding the Eden woodchip concession area. What happened was that, at various times, up to 93 per cent of everything that was cut in the Eden woodchip concession area went out through the Eden port as small pieces of wood to Japan. That led to what I said before, the silvicultural change in the system, which changed the composition of the forest and populations of hollow trees et cetera. What tends to happen is that the industry is quite distorted. To harvest one or two sawlogs, you end up having to cut down 10 or 20 trees to get those one or two sawlogs. The process of spreading the industry out over larger areas, first of all, is not going to make it any more economic; it is already marginally economic at best at the moment. The scientific data totally refutes this idea that logging will reduce fire risk. The empirical data shows quite conclusively now that logged forests burn at a higher severity. I wish it was not that way, but that is what the data show.

The Hon. PETER PRIMROSE: Thank you. Professor Mackey or Professor Gibbons, did you have any response?

Professor GIBBONS: Can I just add to that that we did some work after Black Saturday in Victoria and found there was no association between—timber harvesting in adjacent forests afforded no protection to houses during bushfires. I am across the fire literature pretty well in this space and there is no evidence that timber harvesting affords greater protection to houses during bushfires. During the 2019-20 fires 42 per cent of State forests managed for timber production were burnt during those fires, and I think it was 37 per cent of national parks. Again, there is no evidence to indicate that State forests managed for timber production burn any less than other tenures of forest. If you look at things like prescribed burning or hazard reduction burning over time, it has

not declined over time in New South Wales with changes in tenure. I do not think some of those statements, when it comes to fire, are based on evidence.

Professor MACKEY: I agree with what my two colleagues have said. I would add to that, getting back to an earlier point I made in my introduction about looking at the total economic value of native forests. As Professor Lindenmayer pointed out, having a more geographically expansive, spread logging operation is more expensive. The cost goes up per unit of wood. But also, there are other costs that need to be taken into account because there are trade-offs with other forest values, including carbon retention and water quality and biodiversity of habitat. Again, this is why I think we need to look at the total economic value of our native forests and the trade-off between different management strategies.

Mr JUSTIN FIELD: Thank you all for your attendance today and submissions. Firstly, to Professor Gibbons and Professor Lindenmayer, I might just ask about your recommendation around FSC certification. Firstly, would you recommend that Forestry Corporation seeks FSC certification but also that private native forestry operations in New South Wales be regulated to a level, if they were able to or required to, to achieve FSC certification as well?

Professor GIBBONS: I would say yes to that. I do not know Professor Lindenmayer has anything to add. FSC certification covers both native and non-native timber harvesting, and there are potential negative impacts on the environment from the plantation sector as well. I think both are important.

Professor LINDENMAYER: I would like to see a lift in the standard of regulation associated both with public native forests and also private native forests. I think you need to level the playing field there for both. But I would add that I think it is important for the plantation sector to also have to lift its game. The issue of weeds was one that was talked about before that is a critical one that the plantation sector needs to deal with, but there are ways of designing plantations to reduce fire risk and to reduce problems with weeds. I think the plantation sector should have to meet those requirements to lift its game as well.

Professor GIBBONS: I think—

Mr JUSTIN FIELD: Sorry, Professor Gibbons. You can answer that more, but I will just add something else. Focusing on public native forests now, in your opinion what would need to change to the CIFOA to enable Forestry Corporation's practices to achieve FSC certification?

Professor GIBBONS: Well, the CIFOA is a several hundred page document. In terms of the area I focused on, the forest structure area, I have made a specific point in my submission that the net harvested area in native forests in New South Wales—the CIFOA condition on tree retention has got to change to enable recruitment of mature trees into wood production forests. Now, for that to be achieved, part of the reason that that condition has been relaxed over time is because there has been increasing pressure to intensify harvesting from the net harvested area in New South Wales. This comes back to a paradigm about calculating maximum sustainable yield.

For timber harvesting to continue in New South Wales native forests, the sustainable yield has got to be well below maximum so that things like structure can be incorporated into forest management and so that other events like wildfires and climate change, that are difficult to predict for, can be accommodated in forest management. That is unlike the current case where a 30 per cent reduction in timber yields over the next 30 years means that there will be an intensification of those areas that are still available for harvesting or still suitable for harvesting; so that is a problem. That is just one aspect. The tree retention prescription condition within the CIFOA must change, but there are many other things in there. I think the other one is more around the regional forest agreement, and that is a sustainable yield.

Mr JUSTIN FIELD: Just to that point of maximum sustainable yield, Forestry Corporation has done a sustainable yield review since the 2019-20 fires. You will be aware of it, being an expert adviser to the NRC, no doubt. That identified a 30 per cent reduction on the South Coast and 4 per cent on the North Coast, but it was largely desktop; they were not able to do a lot of fieldwork. How much stock should we put in that? If you were going to put a margin of error on it—if we were not going to go to maximum; if we were going to go to something else that gave us some airspace here—what should it be? What is the reduction in yield that we are talking about?

Professor GIBBONS: Yes, and they make the point in that document that because of uncertainty around their modelling it is a preliminary review and it is an estimate only. Look, in a recent study I did I talked to the person who does their modelling because I was asked for some information on the growth models for New South Wales timber species. He was pretty up-front about some of the problems with that modelling. I do not know what the margin of error is, but there would be a considerable margin of error. Unfortunately if you work above the sustainable yield you end up—this happened in East Gippsland, where I used to work, in Victoria. They cut above sustainable yield for a long time and it ended up that the local industry was completely and utterly

annihilated when they had to move back to sustainable yield, because they had to reduce their cut so much over a short period of time. It does not help anyone to cut at a maximum sustainable yield, for all the reasons—because of uncertainty in the modelling, because of difficulties with things like wildfire, and as we get more knowledge about impacts on threatened species, for instance. Look, further investment in better modelling of the resource or yield calculations of the resource would be a really good thing for New South Wales forests.

Mr JUSTIN FIELD: Professor Mackey, I might address this to you. Yesterday we heard evidence from Timber NSW and basically this was the quote: "The science suggests sustainable, managed native forest is best for the environment, best for carbon storage and best for climate change." I take from what they said that they were talking about "managed" in terms of "managed with forestry". Can you speak to your view of what the science says around the role of the forest management when it comes to carbon storage and climate response, please?

Professor MACKEY: Yes. I assume they are talking about the main focus of this discussion, which is managing native forests for commodity production. Logging generates CO2 emissions and it reduces the accumulated stock of carbon in a forest ecosystem. Most of the carbon in a forest ecosystem that is in the living biomass is in the woody stems, branches and roots of big, old trees. There are a few implications there. When you put a forest under commodity production management, you reduce somewhere between 30 per cent to 70 per cent—in the forests we are talking about it is probably 30 per cent to 50 per cent. You are reducing by 30 per cent to 50 per cent the standing stock of carbon because you are keeping—as we have heard, structurally you are keeping the forest in a young regrowth phase. Most of the living biomass carbon is stored in big, old trees, and you are not allowing them to grow. The mitigation value of the native forest is reduced by 30 per cent to 50 per cent from logging.

Now, you can say, "Okay, what about the carbon that is stored in wood products?" Well, only a small per cent—less than 10 per cent, or 10 per cent if we are being generous—of the carbon that is in a tree in a forest ends up in any kind of long-lived product. Even then, we are not talking about long; in the case of pulp or paper it is years, and with manufactured wood products it might be a decade. Essentially, it is a delayed pulse. If you think about the counterfactual, the opposite of doing that—conservation management of forests—there are two mitigation benefits. First of all, you avoid the human emissions from logging, so that is an avoided emission. That means that all the ongoing forest growth goes into accumulating the stock of carbon; so you get an avoided emission plus you get this growing stock of carbon. I would say the science does not support that statement that you quoted and in fact the opposite is the case.

Mr JUSTIN FIELD: Thank you. My time has expired. Professor Lindenmayer, I might put some questions on notice to you, in particular around your research on thinning that you mentioned earlier. I am sorry I did not get to you.

Professor LINDENMAYER: Yes. Just to briefly follow up on Professor Mackey's perspective there, the economic analysis that I have seen in recent times indicates that you are looking at a very large amount of carbon abatement, which is potentially worth a very large amount of money. There is significantly greater return to the State economic bottom line from carbon abatement than from native forest harvesting—several-fold greater. The numbers that I am looking at, at the moment, suggest that the native forest sector in southern New South Wales at best returned around $400,000 profit in 2019-20. The softwood was closer to $60 million. Your carbon abatement, at even a bottom-level price, would be at least 40 times to 50 times what the hardwood division was worth. If you were making economic decisions about what the best thing to do was with forests, you would not be doing what you are doing now in native forests.

The CHAIR: I might start with you, Professor Mackey. In your submission you talked about—that it is fuel dryness, rather than load, that is the critical factor. Do we actually have technical capabilities to monitor fuel dryness on a broad scale?

Professor MACKEY: Yes, we do. This is with the advent of time series remotely sensed data. For example, there is a satellite called Sentinel-2. There is also a Japanese one. You will just have to excuse me for one minute; I have got my computer attached to a monitor and it is about to turn itself off. I just have to reboot the screen, otherwise I will lose contact. Bear with me for a second.

The CHAIR: While you are working with that, is that technology widely available? Are we utilising it to its full potential?

Professor MACKEY: It is a well-developed method. It is a time series of satellite data and there are particular algorithms which are able to get measurements that are correlated with fuel dryness. We have experts at the University of Wollongong and other universities in Australia who have been using this, and it has been widely published. They did receive quite a lot of attention about that research following the fires. Some of the

early scientific papers that came out were able to point their finger at that as being one of the critical factors because of this research that the Australian academic community has been doing on this for a number of years now.

I think the other part of your question is: Has this been operationalised so that it can be used as part of emergency planning and emergency management? I think the answer is no, but my understanding is that is well understood and there is certainly one or more collaborative research centres and other initiatives going on—the new Federal agency et cetera—where this is part of the toolkit that people are looking at. Yes, we have the technical capability, and it is certainly ready to be drawn upon and operationalised as part of decision support for emergency planning and management.

The CHAIR: I might go to Professor Lindenmayer. In some of the research that you have done and that you cite in your submission, you talk about stand age and its link to severity of fires. Did any of that research talk about fuel load or the density of thick undergrowth and its contribution to severe fires at all?

Professor LINDENMAYER: Yes, some of the more recent work has looked at the relationship between the structure of the vegetation and the age of the forest and the susceptibility to fire. One of the most important elements of this story is that you need to look at different kinds of fire in this space. Some other authors working in this space have made the mistake of combining what is called canopy scorch, which can often be a fairly cool, fairly slow-moving fire that burns at a flame height that touches the canopy—that is a very different kind of fire to crown burn. Crown burn actually consumes whole trees, including the canopy. You need to break those two kinds of fire apart to look at them carefully, because crown fire is the one that kills people, it is the one the damages property and it is the one that has the highest fire severity.

When we look at crown burn we see, as I said in my opening statement, that logged forests always burn at a higher severity—that is, a crown burn or a crown fire—relative to intact forests. But the important part of this is that it is not what we call a linear relationship; it is actually a nonlinear relationship. It is hump shaped. When a forest is first logged and then regenerated, there is a very low probability that it is going to burn. And then there is a very steep increase in the probability of crown fire for the next 40 years. It reaches up to seven times greater probability than a very young forest. As the forest ages even further, that risk starts to decline again, so that the lowest-severity fires are actually in the oldest forests. We saw that in 2009 and we have seen it again in 2019-20. It is not only fuel loads and dryness that are important; it is actually also the structure of the vegetation that can carry the fire from the ground level up into the canopy and create those very extreme kinds of fires that we did indeed see in parts of south-eastern New South Wales in 2019-20.

The CHAIR: I have only got about two minutes left and I have a question for all of you. We heard evidence during this morning's session about the idea about providing incentives to harvest what they called lower-quality trees as opposed to focusing solely on high-grade trees, and that would be an option in assisting in this mix of tree classes and improving the overall quality of a forest. I wanted to get your opinions on such a proposal—maybe staying with you, Mr Lindenmayer, then we will go back to Mr Mackey and then Mr Gibbons.

Professor LINDENMAYER: I would see that process been quite a negative one. If you are talking about harvesting low-quality trees then where that wood is going to go is into woodchips. It is going to be a high-volume, low-value, low return on investment for the State. We already know that the hardwood sector is essentially contributing very little economically and often haemorrhaging money. We see that in Victoria and Western Australia, where it is a major loss maker. It is likely to be the same in New South Wales. I can also see problems with degrading the forest by taking out the recruit trees and the regeneration. The thinning studies that we have done, which Mr Field was looking for in questions on notice, would suggest that will add to the severity of fire rather than taking away from it. I would be opposed to those kinds of proposals economically, but also environmentally, but also community safety-wise as well.

The CHAIR: Any additional comments, Mr Mackey or Mr Gibbons, or do you support that view?

Professor GIBBONS: I would just add that trees that have decay in them, and therefore hollows, are actually really important for the conservation of a lot of fauna in New South Wales forests. By harvesting them you are just exacerbating the problem, removing that structural habitat feature from logged forests.

Professor MACKEY: I agree with the previous responses to that question. I would just add that doing that, again, there is trade-off with other forest uses and values. It would come at a cost. I would be puzzled as to what demand it is meeting, which is kind of what Professor Lindenmayer was getting at, as well. Thank you.

The Hon. SAM FARRAWAY: Good afternoon, professors. Before the inquiry started I tried to do a bit of research and reading up on different papers and different commentary that has been in the media. My first questions I will direct to Professor Lindenmayer, because I think you have had a bit of stuff that has been—

obviously, papers recently. First of all, from some of the research I have done, would you agree that most of the research into the impacts of timber harvesting has actually been done in Victorian forests?

Professor LINDENMAYER: Most of my research has been done in Victorian forests up until most recently with the effects of fire; that now goes right across the fire footprint for the 2019-20 fires. The research on the composition of forests in north-eastern Victoria also goes across into the south-east New South Wales forests on forest composition. There has been a lot more long-term research in Victoria. Some of those forest types in Victoria are also relevant to what happens in New South Wales. But there has been less research in New South Wales, by and large, than there has been in Victoria.

The Hon. SAM FARRAWAY: Okay, thank you. Professor Lindenmayer, most recently you have published a few articles that deal with the issue of bushfire in forestry. I think they were both here in Australia and overseas—correct?

Professor LINDENMAYER: Yes.

The Hon. SAM FARRAWAY: I think we may have had it referred to earlier, but it includes a paper that I was looking at entitled *Empirical analyses of the factors influencing fire severity in southeastern Australia*. I think that was only published a few weeks ago, wasn't it?

Professor LINDENMAYER: That's correct, yes.

The Hon. SAM FARRAWAY: It had a fair bit of media coverage, because that is where I saw it—correct?

Professor LINDENMAYER: Yes.

The Hon. SAM FARRAWAY: I suppose my point is that I just wanted to, in trying to get across this issue—south-eastern Australia is pretty broad. It is pretty big in terms of being defined. In particular, what forests were the subject of your paper?

Professor LINDENMAYER: They were higher elevation. In Victoria they are called "Wet and Damp Ecological Vegetation Class". In a New South Wales context, similar kinds of forests would be alpine ash forests and shining gum forests—so, the wetter kinds of forests that you see in montane and submontane areas—but that analysis also included lowland, drier forests. That includes coastal stringybark, coastal blackbutt—those kinds of forests.

The Hon. SAM FARRAWAY: To confirm, Professor, that paper where you refer to south-eastern Australia is predominantly based on mountain ash forests in Victoria?

Professor LINDENMAYER: No. That latest paper is based on analyses of a broad range of forest types across the fire footprint of the 2019-20 fires. That includes large areas of montane and lowland coastal forest in north-eastern Victoria, which have strong analogues with what we see in southern New South Wales.

The Hon. SAM FARRAWAY: Professor, have you been able to do any research in particular over the last 10 years here on New South Wales coastal forests and, in particular, I wanted to know where the eucalypt forest types may dominate or where our native forest harvesting rules and practices are different to Victoria. Obviously you have explained that a lot of the research is done in Victoria—predominantly your research and papers are Victorian based. I wanted to find out how they correlate. What are the differences with the forest harvesting rules and practices between the two States?

Professor LINDENMAYER: In addition to our work in Victoria, the latest paper that went back this morning to the journal looks at the fire footprint right across southern Queensland, right through New South Wales and Victoria for all of the 2019-20 fires, so several million data points. Some other work that I have worked on with Professor Mackey on fire refugia also goes right across the fire footprint. In addition we have long-term studies in the Tumut area, which includes the native forest estate there as well as the plantation. And then we have a 22-year study in the Jervis Bay area around Nowra and beyond. So, yes, we specialise in mountain ash forest but we also work in a lot of other forest types. The harvesting regime in the central part of Victoria is clear-cutting or clear-felling, but there are various elements of selective harvesting shelterwood and other silvicultural systems in New South Wales that are partly applied in north-eastern Victoria and partly applied in other parts of central Victoria as well as in New South Wales.

The Hon. SAM FARRAWAY: The New South Wales Department of Primary Industries [DPI] has a forest group and, to my knowledge, it did some statistical analysis of the extent of the severity of the 2019-20 bushfires last year. That is obviously clearly in the space of all three of you before the Committee today. Would you agree with that, some of their statistical analysis, that would go right into your scientific area of interest?

Professor LINDENMAYER: Yes.

The Hon. SAM FARRAWAY: Correct me if I am wrong, but when I read it it appeared that they looked at the entire fire-affected area across New South Wales, which included the national parks, State forest, private forest and they concluded, "At the landscape scale, fire severity was much the same regardless of tenure and in the State forests was not influenced by harvesting." That is, they found no evidence of a relationship between forestry and the severity of the 2019-20 bushfires anywhere in the State, and I note that the recent New South Wales bushfire inquiry made no mention of the link. With that long, drawn-out quote, I wanted to know, have any of you as professors undertaken any equivalent analysis to the Department of Primary Industries?

Professor LINDENMAYER: Yes, I have. That paper, as I said this morning, has just gone back to the journal, one of the world's leading journals in this space. One of the things that is really important in this space is that not all fires are created equal. You can have a canopy scorch, which is a relatively low-severity, slow-burning fire that damages the crown. That is a fundamentally different kind of fire to a crown fire or a crown burn, which completely consumes the canopy. When you separate those kinds of fires and you look across the fire footprint, under all circumstances of fire weather what we see unequivocally is that logged forests burn at significantly higher severity than intact forests. It is a highly significant difference at low fire weather, moderate fire weather and high fire weather. That analysis has been overseen by our statistician at the Fenner School and the results are unequivocal.

The Hon. SAM FARRAWAY: Whilst I think I still have some time, to the other two professors, do you have a view on that question I posed to Dr Lindenmayer around DPI and the statistical analysis, and have you been able to do any equivalent research using that analysis to what DPI have done?

Professor GIBBONS: No, I have not done any analysis of that type. I would direct you to a very recently published paper on the 2019-20 fires by David Bowman and others that also looked at severity. I have only glanced at that paper, so I would just direct you to it perhaps.

Professor LINDENMAYER: Look at figure 3 of that paper because that was the dataset we just reanalysed. They mistakenly put the two kinds of fire together. When you pull them apart, the effect is very strong, but even when you put them together, if you look at figure 3 of Bowman et al, 2021, you will see that logged forest always burns at higher severity.

The Hon. SAM FARRAWAY: Correct me if I have missed something here, but are you suggesting that maybe the DPI research is not quite correct?

Professor LINDENMAYER: I would suggest that that is likely.

The Hon. SAM FARRAWAY: So you are saying that in your opinion—

Professor LINDENMAYER: No, not in my opinion. I will happily send you the figure from our paper that has just been submitted, which shows exactly what is happening in terms of differences in fire severity.

The Hon. SAM FARRAWAY: I find that quite interesting. That is something certainly we can follow up at a later point. Following up on some of your answers, Professor Lindenmayer, can you explain the differences—and it goes back to some of those original questions—between the harvesting operations in New South Wales and in Victoria? You would have to agree that clearly there is a couple of key differences, isn't there? There is no clear-felling, New South Wales predominantly has selective harvesting, not intensive harvesting; that would be correct? And we have in New South Wales what I would say very strict controls on habitat tree retention. Would you agree that there are some stark differences in harvesting operations between New South Wales and Victoria?

Professor LINDENMAYER: I would suggest that you need to look over time. This is what Phil Gibbons was alluding to in his testimony before, that you need to look at compounding effects. What happens is if you make multiple entries into a selectively harvested area and you do what is called high-lead logging, where you take out the largest trees on a repeated basis, you can end up with a similarly simplified forest structure as you can in a clear-fell forest; it is just that it occurs over multiple entries rather than a single operation. Is that correct, Phil?

Professor GIBBONS: That is right. Most of New South Wales forest is Australian Group Selection or modified clear-felling, as in the Eden region. So it is fairly intensive over a period of time. Return cutting cycles are typically 10 to 15 years in the Australian Group Selection. So over time it is not like a bombsite like a clear-fell, but the structure of the forest is still uniformly young after return cutting cycles. You only have to go into some of the intensive harvest zone in New South Wales and it is quite clear that this is the case.

The Hon. SAM FARRAWAY: I am sorry if I have missed something here because I am trying to listen and take all this in and compare it to some of the research I did before. Are you disputing that New South Wales has no clear-felling?

Professor GIBBONS: Yes. Some of the Eden region is managed on what they call a "modified clear-felling" regime. If you go into those sites, they are very large areas, the majority of basal area is removed. I did my PhD in those forests and compared them with East Gippsland, and the basal area retention is not much greater. You are right, in that if you go north of Eden it moves to Australian Group Selection, so it does not approach the type of clear-felling that occurs in Victoria or Tasmania. I totally agree with you there, but parts of Eden are managed very similarly to parts of Victoria.

The Hon. SAM FARRAWAY: Just another point that I wanted to get all three professors' opinion—

Professor MACKEY: Can I give my answer to the question because I did not get to answer that one? In terms of that analysis, I have not seen it so I cannot—

The Hon. SAM FARRAWAY: That is the DPI analysis?

Professor MACKEY: Yes, I have not seen it so I cannot really comment on its accuracy. What I can tell you is this. I have just completed a study where we analysed the burn severity of the mega fire, including an analysis by forest type, by fire weather conditions, by topography and by land tenure. I assume they would have used the same measure, which is a satellite—as we talked about, there is a satellite index for vegetation dryness, moisture. There is also one for burn severity: the burn severity index. You end up with five classes and one of the limitations of it is it saturates at the high level. You cannot actually see the difference between those top classes that Professor Lindenmayer was talking about. And this is actually one of the issues we have dealt with in our paper. The other comment I will make is you cannot just compare the data between land tenure types per se; you actually have to look at the land use history. For example, a lot of our national parks were logged et cetera. I would just pass those comments. I have not seen their work; I would like to see it. I have just finished a big, major study looking at burn severity and all of these different factors. One conclusion we have drawn is you have to have very detailed, fine-scale mapping of land-use history in order to actually tease out those higher levels of burn severity.

The Hon. SAM FARRAWAY: Thank you, Professor Mackey. I have only got time for one more question. I am happy to direct it to you to begin with. I just wanted to get the opinions of the three of you before I finish that in terms of looking at the difference between harvesting operations between Victoria and New South Wales, would you agree that again New South Wales predominantly has selective harvesting and not intensive harvesting and that we in New South Wales have pretty strict controls on habitat tree retention?

Professor GIBBONS: Could I start? As I said in my opening statement, in the current conditions for habitat tree retention 5 per cent to 8 per cent of the net harvested area have habitat clumps. The remaining 92 per cent to 95 per cent of the net harvested area, the requirement is that you leave what hollow-bearing trees are there—and in some cases there are very few left—and there is no recruitment of them. That part of the current condition is not in line with what happens in other States. I have done some study recently, and in my statement there is a chart that shows you what is happening to habitat trees in the net harvested area, that 92 per cent to 95 per cent of the net harvested area and they are declining because there is no recruitment. When they collapse, no replacement. I would not say that it is best practice in terms of habitat retention across the whole net harvested area of New South Wales.

Professor LINDENMAYER: I also see some fairly strong similarities between north-eastern Victoria, East Gippsland—where Professor Gibbons did his PhD and other students of mine have worked—and also across the border into south-eastern New South Wales, particularly in terms of the change in the composition of the forest. As I was talking about before, the shift towards dry, very flammable tree species like silvertop ash is really quite demonstrable, and the knock-on impacts on things like koalas, greater gliders and other species is really quite profound.

The Hon. SAM FARRAWAY: I think my time has expired, Mr Chair.

The CHAIR: It has. Thank you, gentlemen. That concludes our session for this afternoon. Your insights were very welcome. I believe you may have taken some questions on notice. The Committee secretariat will be in touch as to the time line and getting that back to us. Once again, thank you for your time.

(The witnesses withdrew.)

(Short adjournment)

MICHELLE FREEMAN, Vice President, Institute of Foresters of Australia and Australian Forest Growers, affirmed and examined

STEVE DOBBYNS, Member, Institute of Foresters of Australia and Australian Forest Growers, on former affirmation

The CHAIR: Welcome back to our final session this afternoon on day two of our inquiry into the long-term sustainability and future of the timber and forest products industry. We now have with us this afternoon Dr Michelle Freeman and Steve Dobbyns from the Institute of Foresters of Australia and Australian Forest Growers. Did either of you want to make a short opening statement before we go to questions?

Dr FREEMAN: Yes, I was just going to introduce us and briefly our submission. It should only take two to three minutes if that is okay?

The CHAIR: Yes, that is fine.

Dr FREEMAN: Great, thanks. As you just heard, I am the national Vice President of the Institute of Foresters of Australia and Australian Forest Growers [IFAAFG] and Steve Dobbyns is here as an IFAAFG member. I know that you have already heard from Steve previously with a different hat, but today we are here as independent professional foresters and forest scientists to talk about the institute's submission to this inquiry. The Institute of Foresters of Australia and Australian Forest Growers is an independent professional association for forest scientists, managers and growers. As with many other professional associations, like Engineers Australia and the Australian Medical Association, we offer a range of benefits and services to our members. We work to provide professional development, a quarterly peer-reviewed scientific journal called *Australian Forestry*, a peer-endorsed registration scheme, and we advocate for active and adaptive land management throughout Australia and across all tenures.

We have got approximately a thousand members and we are supported by an office of three part-time staff. We are funded by our membership fees, so we vigorously defend our professional independence in all that we do. Our members are the experts in forestry, and we operate across all aspects of forest land management and tree growing throughout Australia, including as active firefighters and forest practitioners. The word "forestry" really captures what we do. Some people may think that forestry is just about timber harvesting. Sometimes the word is misused in this way, as is the term "silviculture", which we do talk about within our submission. Silviculture is the toolkit for forestry, and forestry in its true essence is the science and craft of creating, managing, conserving, using and caring for forests—"science" because there is knowledge and learning that underpins forestry based on measurement and analysis, and "craft" because there is a skill and an art form that is needed in forestry that requires us to read, connect with and understand forests in ways that include but cannot always be described by Western science alone.

Institute members work across government agencies, conservation, forest fire management, urban forest management, in private forest companies as forest consultants, and many are private landowners. Over 90 per cent of our members have a science qualification specialising in forest science and environmental science. Many of our membership identify by the term "forester", and that is a term that refers to people who are specialists in forest and tree management. Foresters have strong technical and operational expertise in forestry and we view the landscape as a whole, understanding that ecosystems—the soil, water, animals and plants—are all interconnected. We also understand that forest health and resilience is inherently linked and is fundamental to human and community health and resilience.

In our submission we have provided the background information and science that speaks to three key themes. The first is that as the sixth most forested country in the world, Australia has a moral responsibility and the opportunity to do more to meet our domestic timber supply locally. Active and adaptive management is required to overcome key challenges and to build health and resilience into our forests. We are in dire need of a new shared and holistic vision for our forests because there is much about what we are currently doing that clearly is not working. Specifically we provide a number of recommendations under key headings that address environmental, social, economic and cultural aspects of forest management. I was not planning to delve into those here, assuming that you have read our submission, and so in the interests of time I was wanting to allow the opportunity for you guys to get into questions. But hopefully that gives you a good summary of who we are and what we are here for.

The CHAIR: Yes, it does. Thank you. I will pass to the Hon. Mick Veitch for the Opposition.

The Hon. MICK VEITCH: Thanks, Chair. Dr Freeman, in your opening statement you said things have to change, and I draw from that that means there are things that are not working in the way that we are

managing our forests, that we are living with our forests, that we are essentially managing our forests. So what is not working in your view?

Dr FREEMAN: Well, there are a few different elements to that. I think in the first instance what I referred to at the end there about a lack of shared vision. We seem to be seeing a lot of changes, policy decisions, those sort of forest wars issues playing out, concerns from the sort of polarised debate about how we manage our forests. The current *National Forest Policy Statement*, which is the latest or the current vision for our forest, was 1992. Although that was really groundbreaking at the time and has a lot of really great stuff in it and set us up, for example, with the Comprehensive, Adequate and Representative [CAR] Reserve System and other really positive developments, it fails to address key issues that we now currently face, including climate change. In that time we are also seeing increased severity and frequency of fires and also increasing demand and concern about being able to face global challenges, build a bioeconomy and meet global carbon targets. And forestry, forest management, has a key role to play in that.

So while we are caught up in these kind of forest wars—you know, conservation or production—what I would see would be more beneficial and useful is if we think about our forests as a holistic landscape and we think about the way that we can use and manage our forests for multiple values regardless of land tenure. Those are the sorts of approaches that are being looked at now in Europe. There are a lot of examples that we can draw from there, including better engaging First Nations people in forest management and learning from their world views. I was going to say something else and it slipped from my mind. I don't know if Mr Dobbyns wanted to make some comments on that?

Mr DOBBYNS: I think the key that Michelle has touched on there is that it is not tenure based. Forest management and the skill set that forest scientists like myself and Dr Freeman possess are across tenure. It seems that the focus is solely on the production of forest and the view that the small percentage of production forests that may actually be harvested for timber is so dramatically different from what happens elsewhere through the forest estate. Threatened species, invasive plants, weeds, fire do not respect lines on a map and forest management and forest health need to be addressed on a landscape scale. The Regional Forest Agreements and the CAR process is a result of the National Forest Policy and looked at addressing and getting that balance between environment, social and economic right. But since the CAR reserves were created, we have been neglecting to an extent what is happening in those reserve systems and focusing all of our attention on what is happening in the production forests and, in our view, to the detriment of what is happening in the conservation reserves. So it needs to be tenure neutral and across the landscape.

The Hon. MICK VEITCH: I have read your submission. This is an inquiry that has had about 230 or more submissions, we have had a couple of days of hearings, lots of information before the Committee where we are essentially—Dr Freeman spoke about vision—trying to investigate, interrogate the policy settings that will go forward for the forest industry not just for 20 years but looking towards 50 years, or more even. One word that has not been used in the submissions and in the testimony over the last two days—and it surprises me—but it is about leadership. I would like to pose, probably to Dr Freeman first and then Mr Dobbyns, do you think that this is an industry, a sector that is crying out for leadership at the moment, particularly political leadership?

Dr FREEMAN: Yes, I was going to confirm that. Yes, I think so. From my experience and having worked across a number of States in Australia in forestry, it seems to be fairly common that we have these decisions or policy settings that get made in a bit of a vacuum and it does not consider flow-on implications. If we are talking about forestry and particularly the timber element of that, trying to separate out timber from other values or make decisions to, say, for example, increase the national park estate whilst still claiming that we can meet our domestic timber needs, whilst at the same time not investing in new approaches for establishing more plantations in appropriate time frames to do that are all interacting in ways—which probably again speaks to that first question—that are not working.

So when we talk about the need for leadership, I think, yes, there is a definite need for it, but it needs to be leadership that is not done in a vacuum, that actually speaks to the community—which is what you are doing now, which is wonderful—and thinks about the flow-on implications of decisions. Because sometimes I think that is my concern: We see decisions being made and as foresters we have concerns that they are going to have real dire flow-on implications for the sustainability of Australia, Australia's ability to actively and adaptively manage our forests, for Australia to be able to contribute positively to climate change mitigation, bushfire mitigation activities. I struggle to see those linkages being made between decisions and in part I think that comes from that lack of vision in the first instance.

The Hon. MICK VEITCH: Mr Dobbyns, what is your view about the need or the adequacy of the current political leadership [inaudible]?

Mr DOBBYNS: I think there has got to be recognition of the timescales that we are talking about. If we are talking about political leadership—no disrespect to the Committee—we are really dealing in election cycles. As a forester, as someone who is tending a forest and growing either plantation timber over 35- to 40-year rotations or in the case of native regrowth forests 80- to 100-year cycles, there has got to be recognition of those timescales. Similarly with things like fuel load accumulations, you are talking about seven to 10 years being the critical stage after an event, like after the fires we had two years ago, for the fuel levels to be reaching those similar levels again. So a three- to four-year election cycle does not align very well with any of the planning horizons that forest scientists and land managers are used to dealing with.

The Hon. MICK VEITCH: My time is up, Chair.

The CHAIR: I will pass to Mr Field.

Mr JUSTIN FIELD: Thank you, Chair, and thank you both for your attendance today and for your submission. I am not sure if you had a chance to listen to the previous round of speakers. I wanted to ask you to respond but I will explain quickly their position, and I am doing that in contrast to your submission. On page 5 you make the comment in bold that, "Well-managed harvesting could be used to strategically manage bushfire risks and enhance forest health and resilience," and you point to silvicultural treatment including thinning of forests for strategic firebreaks. We heard evidence in the last session that contradicted that very strongly about thinning and highlighted that logged forests—indeed, in every instance—assessed since the 2019-20 fires burned more severely than unlogged forests. Could you address the information we received in the last session in that regard and cite, if you could, the evidence that you base your claim on?

Dr FREEMAN: Sure, I can start. Unfortunately I was not able to listen in previously, so thanks for that update. I am not sure who made those comments but, with respect, I think there is ample scientific evidence to say that what they have stated is actually not correct. In relation to how silviculture can actually help with bushfire mitigation, we know that larger trees are more resilient to fire, they are less likely to be killed. By thinning the forest you can actually grow bigger trees quicker. So that is one way in which silviculture can be used to actually enhance the resilience of our forest to bushfires when they do occur. Mechanical fuel reduction, including thinning, can be used to mitigate the risk of bushfires because it removes fuel.

Now, of course, if you just thin the forest and then leave all those thinnings lying about on the ground, sure, you have not reduced the fuel loads, so that will not help. But there are options to deal with that, including taking that material away. You could then potentially even use it for things like biofuels or for some of these mills that are able to process smaller end logs and actually value-add those into products that can be onsold, whilst also having the benefit of having fuel-reduced your forest and also by thinning the forest, having the remaining trees grow bigger quicker for future fire resilience. So I can provide a numerous range of papers that talk to all of those things. I can take that on notice if that would help you?

Mr JUSTIN FIELD: That would be very useful. Unfortunately I have got very limited time. I have less than two minutes left. You also make the comment that forests are a very effective means of sequestering carbon. Would you accept though that the notion of leaving the forest to grow larger and more mature would be the best methodology to sequester carbon in the forest?

Dr FREEMAN: Did you want to take that, Mr Dobbyns?

Mr DOBBYNS: The Intergovernmental Panel on Climate Change actually refutes that, Mr Field. Even in their most recent findings they made the statement—my words, not theirs—that sustainably managed forests that are managed for a range of values, including the production of wood products that store carbon, is the most successful opportunity for carbon abatement and mitigation. The work that has been done by the New South Wales Department of Primary Industries over the last 15 years, in particular by Fabiano Ximenes, is world class and world renowned, and again there are a number of papers we can provide you, and one of them is titled *Harvested forests provide the greatest ongoing greenhouse gas benefits*. There is a range of papers that support that.

Mr JUSTIN FIELD: I would appreciate if you could provide those links. That would be very useful for us. I think my time has expired but if you did want to expand on something, Dr Freeman, go ahead.

Dr FREEMAN: I was just going to say, coming back to this point that we cannot look at issues in isolation. There are certainly some areas of forest that should be left in a relatively untouched state but overwhelmingly, and we see this more—there is actually a recent paper out today from an Aboriginal academic saying that the concept of wilderness, where we exclude human management from our forests, is actually not aligned with Aboriginal world views and is not helpful, not only to the carbon and those sorts of aspects but—when you think about it, as we just spoke about—the fire mitigation aspects, the cultural and human health and wellbeing aspects that come from it, and also potentially the lost opportunities from having that management in the bush so that we are actually actively and adaptively using all the tools in the toolkit to overcome things like

biodiversity decline. It has been shown that increasing human connection with nature rather than removing humans from nature is actually a much, much better thing for our forests and for the health and resilience of our forests and communities moving into the future. So we also need to be careful that we are not just thinking about how we manage our forest for one value like carbon but all the interlinked values that come from those sorts of decisions that we make.

Mr JUSTIN FIELD: I am not sure anyone is talking about removing all human interaction but I appreciate that advice. Thank you, Chair.

The CHAIR: I might ask you to take a few questions on notice, as I am conscious of time and it would probably be better in more detail. You talk about emerging technologies in processing, growing, harvesting and falling. On notice, could you provide examples to the Committee of those technologies that are emerging that we should be looking at investing in and supporting?

Dr FREEMAN: Yes, we can take that on notice, or do you want a bit of an answer to that now as well?

The CHAIR: Perhaps on notice. I am conscious of time and I have a couple of questions I do want to get through. The CFMEU proposed a forestry advisory council that would comprise experts from industry to advise government. In principle, would that be something you would support?

Mr DOBBYNS: It is something that has been trialled in the past. There was a forest industry task force in New South Wales, which has not actually been active over the last couple of years. But that was quite a useful forum for information flow to and from government, and also it was instrumental in setting up or informing on the *NSW Forestry Industry Roadmap* several years ago. So reinvigorating something like the forest industry task force would be certainly welcome in New South Wales.

The CHAIR: Doctor, in your opening statement you spoke about that you provide services to your members, including education. Some of the evidence we have received today and through other submissions talked about the need to improve the education on silviculture. Would you agree with those statements, that we need to improve the education on silviculture?

Dr FREEMAN: One hundred per cent. I think silviculture is one of the most important tools that we have in the toolkit not only for producing a sustainable yield of timber, whether it is from native or plantation forest or the full range really and farm forestland, but also, as we have just spoken about, for the health and resilience of our forests in combating climate change and sequestering carbon. Silviculture really is the foundation to all of that, and I think it is a somewhat dying art. In terms of our teachings in universities, some of the fields that have previously had that as a dedicated subject no longer exist and so we are losing some of this knowledge, which is a real problem I think moving forward.

The CHAIR: One final question: In your submission when you are talking about the CAR system, you say there is an inadequacy of minimal management intervention. Do you believe that is a case of inadequate funding to do proper management intervention, is it a lack of will on the ground, or is it both? Or is it something else?

Mr DOBBYNS: It is a combination of factors. Certainly with the expansion of the CAR Reserve System as part of the Regional Forest Agreements there was a huge increase in land base but that was not matched necessarily with budget. I did make the comment yesterday that the Office of Environment and Heritage [OEH] costs the taxpayer $121 a hectare to manage conservation in New South Wales, whereas for State forests the taxpayer contributes $9 a hectare. Those figures are sound. There are some issues with ideology within the department, managing conservation areas, and that is why we are suggesting that active and adaptive management should be adopted across the landscape.

We cannot be managing forests for forest health on one side of the map—because it is State forest—differently from how we should be managing it on the other. The people who are working both on the ground in particular, in OEH and State forests, are all members of the Institute of Foresters of Australia [IFA]. They are forest scientists on both sides of the fence. I know from talking to the ones that are working in the conservation side, sometimes they do feel frustrated that things that they would like to do go against government or departmental policy. So there are some issues there and I would suggest there are probably the same sorts of issues on the Forestry Corp side of the fence as well.

The CHAIR: Thank you. My time has expired. I am looking for a Government member to take charge. Thank you, Mr Martin.

The Hon. TAYLOR MARTIN: Just a quick question picking up on something that Michelle Freeman mentioned a few minutes ago regarding removing human interaction and that it was not ideal to the health of the forest. Would you be able to elaborate more on that? That is quite fascinating.

Dr FREEMAN: Sure. It is interesting that in Australia we still have this quiet colonial view about nature where humans are there and nature is there and the best thing for the environment is to have wilderness doing its thing and we just do our thing separate to that over there. I guess we have spoken about it a bit already—that sort of approach is unhelpful from not only a human health perspective but the environmental health perspective. You can see that those changes in management have already been identified and embraced in Europe where they have realised that humans are animals, we are part of nature, and the more that we try to separate ourselves from it, the less we understand about it. So much of what we do in forestry and as foresters is because we are in the bush observing, watching, learning, similar to Aboriginal people for the last 60,000-plus years. Being out in the environment is what actually enabled them to see changes as they were occurring, implement management that was appropriate for what was happening in the landscape at the time. And with the huge challenges that we now face—continuing ongoing declines of biodiversity and other things—we need to be monitoring, looking and being out in the bush in order to actually appropriately respond to those challenges.

The Hon. TAYLOR MARTIN: That is all from me, Chair. Thank you.

The Hon. PETER POULOS: Chair, I have a very quick question. Thank you both for appearing. Dr Freeman, you mentioned briefly and in your submission references to opportunities for First Peoples. Could you expand on where you might identify the best opportunity to tap into their expertise? The second question is that previous witnesses have indicated that the economics has now changed for the industry. If that is the case and that proposition is true, do you have any thoughts on how the industry could adapt or should adapt to remain viable in the years ahead?

Dr FREEMAN: So about First Nations involvement, I have to say that New South Wales really is a forerunner in many ways in this sense. Some of the things that Forestry Corporation does around cultural burning are really fantastic and probably are above and beyond where other States currently are in that space. If you look to Canada though, there are some really interesting arrangements, memorandums of understanding and different tools that they are using—leases over particular areas of land—where aboriginal people are able to manage that forest in ways that they see fit. Many of them are actually looking to commercial timber production as part of a broader suite of management activities that they take in land that has been made available to them because the timber production aspect actually allows them to generate income and employment for their people, who have been struggling on that front for some time. So although I think New South Wales is really, as I said, on a good path, there are additional things and the benefits that commercial timber production can provide to Indigenous communities as well as the ecological management aspects are two opportunities there.

Mr DOBBYNS: And bearing in mind—

The Hon. PETER POULOS: [Disorder] the economics? Mr Dobbyns?

Mr DOBBYNS: I was just going to follow on from Dr Freeman. One of the things that probably is not recognised widely in New South Wales is that local land councils are one of the largest private landowners in the State and they do have private native forestry landowners in the State. They do have quite a significant area of land that they have under their control and to a degree are crying out for some information or assistance in how that might be managed. I know that Local Land Services are reaching out to those communities offering assistance. In regards to cost changes, that may be a question better left for industry to answer, rather than the Institute of Foresters.

Dr FREEMAN: One comment I might make on that, I am assuming that comment is implying that commercial timber production is becoming uneconomic, having not heard who made those previous comments, is that right? I guess if that is the case, they must be talking about native forests as opposed to plantations because we know plantations are a positive economic exercise. What I would say in relation to timber production on public land is that we should not be expecting it to be raking in a huge profit because if you are managing for all those other values, hopefully you are breaking even but your whole encompassing group of management actions should mean that timber production in and of itself is not—you should not be looking for it to be an economic exercise. It is about the flow-on benefits, and that is what we should be measuring, that activity. That is where the value is in commercial timber production on native forest land, which is the opportunities to conduct silviculture and do things to actually manage for threatened species and other things as well as provide beautiful, high-quality timber products that you cannot get from anywhere else at the moment. So if we think about the full range of values and flow-on benefits of timber production to communities and society, then that is where we should be looking at the value of that activity.

Mr DOBBYNS: And one of the things—we have made the point within our submission—is that there should be a cost-benefit analysis across the landscape, across all tenures.

Dr FREEMAN: Absolutely.

Mr DOBBYNS: It is okay to say that the timber industry may not be making the New South Wales State coffers a lot but by the same token we should be looking at the cost-benefit analysis of conservation in the State as well, bearing in mind that the State forest estate is not all available for harvest. The State forest estate has more than half of its land base already in formal and informal reserves and providing a conservation benefit as well. So we need to bear that in mind and look across the landscape and ask whether conservation management in New South Wales is a cost benefit as well and whether it is sustainable.

The CHAIR: It seems there are no other questions from the Government and time has elapsed anyway. I thank both of you for your time this afternoon and the answers that you have provided and also obviously the questions that you have agreed to take on notice and come back to us with. The Committee secretariat will be in touch as to how that can be done. Once again, thank you for your time. That concludes today's hearings.

(The witnesses withdrew.)

The Committee adjourned at 15:04.