# Science to Practice Forum 2023

Day 2 Welcome and Session 1 transcript

(Duration 66 mins 6 secs)

7 June 2023

## Introduction

This is the transcript of one of the Future Drought Fund’s Science to Practice Forum sessions, presented by the Department of Agriculture, Fisheries and Forestry. This transcript is for Day 2 of the Forum, the welcome session and session one, Putting down roots.

Learn more about the [Science to Practice Forum](https://www.agriculture.gov.au/agriculture-land/farm-food-drought/drought/future-drought-fund/research-adoption-program/science-to-practice-forum).

## Transcript

[Recording begins]

Pip Courtney [00:00:24]:

Welcome to day 2 of the Future Drought Fund’s 2023 Science to Practice Forum. I’m Pip Courtney and I’m your host for this year’s 3-day forum. A warm welcome to you wherever you are joining from today. The Science to Practice Forum is a showcase of the innovative tools and practices Australian farmers and communities are using to prepare for future drought. This year’s forum got off to a cracking start yesterday and in just a moment, the Secretary of the Department of Agriculture, Fisheries and Forestry will join you with a welcome and to share some of his favourite things from yesterday. For me, I can’t go past hearing the stories of farmers who are putting science into practice and using data and technology to adapt their existing farming techniques in response to our current climate conditions as well as those projected in the future, like the horticultural growers in Western Australia who are using less water and fertiliser as a result of knowing the moisture level in their soil. There are more great stories to come today on putting down roots, planning for profitability and productivity, and using the right tools for the right job. Before we get started today, Ngunnawal Traditional Owner, Tyronne Bell, is here to welcome you to the country we are broadcasting from in Canberra.

[Video voiceover begins]

Tyronne Bell [00:01:49]:

Ladies and gentlemen, my name is Tyrone Bell. I’m a descendant of the Ngunnawal people and it’s my privilege this morning to welcome you to the Country of the Ngunnawal people. To begin with I would like to let you know that traditional Aboriginal law requires any visitors to the Country being made welcome. This customary tradition has been passed on by all our generations. This ritual forms a part of our belief system. Its purpose is for visitors to acknowledge whose Country it is and then in turn being acknowledged as visitors and made welcome. This welcome custom has happened for thousands of years, and we use it as protection for Country against bad spirits. Being a Ngunnawal Traditional Custodian, it gives me pleasure to invite you onto the Country of my people. [Ngunnawal language].

In the language of my people means: This is Ngunnawal Country. Welcome to our meeting place. Please enjoy. We acknowledge and pay our respects to the Elders past and present. We call Country the Mother, because as a mother cares for her children, so does the land cares for us. This is why Aboriginal people have such close ties with the land. On behalf of myself and my people, I send a warm welcome to everyone here. I’m proud to be Aboriginal and one of the traditional carers of this land. I want you to feel welcome while on our Country. We want you to feel welcome while visiting Ngunnawal Country and ask that you respect the land as we have done for 60,000 years plus.

So in keeping with the Ngunnawal tradition and the true spirit of friendship and reconciliation, treat everyone and everything with dignity and respect. And by doing so, it is our belief that your spirit will be harmonised with your stay on Ngunnawal Country. It’s our belief that our ancestors will then in turn, bless your stay on our spiritual land. May the spirit of this land remain with you today, tomorrow, and always. Once again on behalf of the Ngunnawal people, I welcome you to our traditional Country. [Ngunnawal language]. Always was, always will be Aboriginal land. [Ngunnawal language]. Thank you. Goodbye.

[Video voiceover ends]

Pip Courtney [00:04:07]:

Thank you Tyronne. And good morning to Andrew Metcalfe, the Secretary of the Department of Agriculture, Fisheries and Forestry.

[Video voiceover begins]

Andrew Metcalfe [00:04:15]:

Well, good morning everyone and welcome, to day two of the third annual Science to Practice Forum. And thanks Pip. We’re really excited to have you hosting this year’s forum. You’re an award-winning journalist and a long-time presenter of the ABC’s Landline Television program, and you’re a great champion of the Australian agricultural sector, so it’s great to have you involved this year. I’d like to pay my respects to the Traditional Owners of this land. We acknowledge and pay our respects to the elders, and I’d also like to acknowledge the Traditional Owners of the lands on which people are joining us from here today and pay my respects to elders past and present. Can I also acknowledge all Aboriginal and Torres Strait Islander peoples who are joining us as part of the forum today. Over the course of the forum, we’ll be talking about the many ways that people in this great nation are preparing for the next drought.

As we’re all aware and has been reiterated throughout the forum, we know that dry times in this country are inevitable, and we also acknowledge that many people have experienced some of the worst flooding on records since the last forum occurred. So, while we’re always conscious of drought and our need to prepare for it, we’re also looking at what it means to build more resilience more broadly through practice change, community initiatives and knowledge sharing. Yesterday we had updates from members of the Future Drought Fund Executive about the ways in which the fund continues to deliver programs via our strong network of stakeholders, the organisations, producers, and research bodies on the ground that we invest in, how we can all implement new ways of working and learning. We also heard from First Nations farming advocate and Worimi man Joshua Gilbert, who spoke about his research interests in sustainability and climate change, Aboriginal culture and native foods and Aboriginal engagement and inclusion in agriculture.

We saw a compelling example of innovation in action from the Avondale First People’s Traditional Produce Innovation and Manufacturing Hub on their wattle seed harvest and plans for product development. And that’s a really great example of bringing a new idea to the table, so to speak, and a great look ahead to our day 3 forum sessions on engaging First Nations farmers. So be sure to tune in for those tomorrow. Innovating at scale through research and development was a theme of yesterday’s opening day as were the opportunities global connections for drought resilience provide us with. It’s really exciting to hear about international perspectives and how they’re influencing our drought resilience and how our learnings and approach can be shared in exchange. Another highlight for me yesterday was the data-driven projects and research outcomes like the trial of 96 different soil health applications in Queensland, the trial of non-conventional practices in Wagga Wagga and the Soil Moisture Monitoring Project in WA being carried out with our partner organisations.

These are some of the examples of how producers are helping build evidence for better practices. It was also great to see how collaboration between producers and researchers is contributing to positive outcomes in business and caring for country. And it was particularly telling to hear that participants in the Nuffield program have subsequently gone on to increase their farming profitability and add value to their enterprises. As I’m sure everyone knows, the Australian government is helping grow Australian agriculture’s ambition to become a 100 billion industry by 2030. And we can contribute to that goal by growing the resilience of our farmers in rural and regional communities through innovation and collaboration and the work of the Future Drought Fund and our partners. Thanks again to all of our presenters, panellists, video participants, and departmental representatives from day one. So colleagues, today we are looking at how the Future Drought Fund is putting down roots sometimes in a quite literal sense.

2022 Farmer of the Year Michael Taylor will join us shortly. Michael is a sixth-generation farmer who has a future focused approach to farming, which includes building drought resilience through tree planting, rotational grazing, and encouraging a cultural shift. We’ll take you right to the centre of Australia, the Red Centre of Australia, to share with you an FDF Drought Resilience Soils and Landscapes project demonstrating the restoration of natural hydration functions in Northern Territory catchments. This is a really important story, not just for how the work there could have implications for drying conditions elsewhere, but also about the importance of the nature of our relationships. This project, like many others, relies on the hard work of the local Drought, Resilience, Adoption, and Innovation Hub with landowners and managers, with First Nations rangers and with scientific experts. Today we’ll also hear from other leaders in the field with our morning session dedicated to planning for profitability and productivity in a changing climate.

And speaking of planning, I’m particularly looking forward to hearing about the Farming Family Reboot program, a dynamic 3-day event held in Armidale, New South Wales, giving farming families the chance to improve their critical decision making and teamwork skills. Today’s program will also feature a panel of young agfluencers and I’m looking forward to hearing the perspectives of some of our next generation of farmers who are using social media to grow the audience for Australian agriculture. Ladies and gentlemen, this is the third year that we’ve had the honour of delivering the Science to Practice Forum. Last year’s forum shone a light on the work being done by and with the 8 Drought Resilience, Adoption and Innovation Hubs. And this year the forum continues to illustrate how the Hubs and their partners have made significant strides in building the foundations of a drought resilient future in their regions.

So be sure to attend day 3. Tomorrow on our Community and Policy Day, we’ll feature presentations and discussions on the areas that we know are vital to thriving regional communities, relationships, community planning for resilience, overcoming barriers, and embracing opportunities for change, and the importance of rural and regional mental health Hub project leads will also speak to vital conversations happening with First Nations farmers and communities. As the first farmers on these lands of Australia, it’s truly exciting to see all of the hard work being done by our Hubs, our farmers, and our communities in building a sustainable agricultural sector and to see how partnerships and strong connections are positively impacting farmers, land managers, and people in their regions. So I’m sure like you, I’m really looking forward to hearing more about the work of the Future Drought Fund in action on the ground across Australia. So please don’t be afraid to be vocal today. Take the time to consider your questions to presenters and panellists and use the Slido function to ask these and participate where possible. We hope you enjoy today’s program and thanks once again for joining us, for being part of our vision at the Future Drought Fund and for helping us build a drought resilient farming future for Australia.

[Video voiceover ends]

Pip Courtney [00:11:34]:

And to expand on something the Secretary said, before you meet today’s feature speaker Michael Taylor, you can use the live the livestream platform to join in to ask questions of the presenters and panellists. As the secretary said, don’t be shy. Part of the aim of the forum is to collaborate and connect you with like-minded thinkers working in the ag sector. So you’re encouraged to ask questions using the Slido function to ensure your voices are heard. You can use the live streaming platform you are on to join in and ask questions of the presenters and panellists, as the secretary said, don’t be shy. Part of the aim of the forum is to collaborate and connect you with like-minded thinkers working in the ag sector. So you’re encouraged to ask questions using the Slido function to ensure your voices are heard. And it worked really well yesterday and the questions were great. I bet you’ll have questions for today’s feature speaker who’s in the studio after spending a month in Europe, which is his largest market as a grower, Michael Taylor is a sixth-generation wool grower with a future focused approach to farming and building drought resilience through tree planting, rotational grazing, and encouraging a cultural shift in the ag community. He’s also the 2022 Farmer of the Year. Michael, welcome to the Science to Practice Forum. Over to you.

Michael Taylor [00:13:03]:

Thank you Pip for the introduction and thank you to the Future Drought Fund for having me here today to tell some of our story about agroforestry in practice. Taylor’s run is on the traditional land of the Anewan people, and I’d like also like to pay tribute to their ongoing love of the land, love of the people, and love of the high country culture. So this is our farm and this is some of our story. I’m going to try and squeeze in a lot in only a short time. This is like a 40 or 50 year story. I’m sixth generation and we’ve been on this land for 180 years, so there’s been a hell of a lot learnt over that time and a significant amount about agroforestry in the last 40 years.

Our story and brief. So yeah, Taylor’s run farm is primarily a sheep and wool producing property on the high country of the New England Tablelands for about running about a thousand hectares at the moment. We also graze cattle and we have an agritourism side business and a significant agroforestry enterprise. Generally, we love growing stuff and we’ve fully integrated those enterprises, so we’re proud of the natural capital that we’ve regenerated over the last 40 years, and we’ve learnt a hell of a lot along the way. And we love sharing the lessons, pointing out all the mistakes we’ve made. And yeah, we’re always an open gate to show people around. Had a lot of challenges, been through a number of droughts, um, including the last drought, which 2019 was probably the record drought for our family on that land.

So building resilience into our business and our land is, is very much in the forefront of our minds. I’ve also been through various market highs and lows. I think when my father, when I first moved back to the farm 18 years ago, my father kept saying it’s never been this bad, can’t get any worse, and it just kept getting worse. So yeah, things have obviously been up and down since then, but yeah, we’re facing another challenging time at the moment as we’ve seen in the livestock market.

I also, as Pip mentioned, got a little bit of recognition. So that’s been quite humbling. So, a little bit about the history of our farm. So the first a hundred years of settlement on the land went reasonably smoothly, you could say. It wasn’t until the intensity of the, our grazing enterprise increased significantly after the second World War, introduction of synthetic fertilisers saw stocking rates grow dramatically, and a lot of the landscape went from over 25% tree cover down to less than 5% across the New England tablelands, between the 1950s and the mid-eighties. We’ve since planted back, we’ve planted nearly a quarter of a million trees on our place and brought that tree cover back, back over to 23%.

Whereas a lot of the New England tablelands are still sitting at, at 5% tree cover. Aerial photography has been wonderful in documenting this story. This is a series of photographs from 1952 through to 2020. You can see the decline in in tree cover and the red circle. A couple of circles there showing areas that had disappeared and areas that we’ve since replanted with various trees. In the red circle, there’s a remnant of some New England brittle gum that, in 1960, my great-uncle, my grandfather’s brother was visiting from Canberra. He was an entomologist. And they went out, my father was only about 10 at the time, they pulled up in the ute and went out to have a look at the eucalypts there, they were dripping in Christmas beetles.

And it was my uncle, the entomologist, that said these Beatles will be the death of the eucalypts on the New England tablelands. Little did he know how true that would be. A lot of trees were lost due to breakdown in the ecosystem. New England dieback is very well documented, not only in Australia, but known about around the world. So we’re now seeing dieback in a lot of other areas in Australia where there’s been breakdowns or overuse of the land. So you can see also, in the photos, how many trees were planted back into the landscape over that time. And I won’t say they’re all in the right species in the right places, but we’re learning.

So I’ve just grown up planting trees, so I haven’t really known anything different. My parents on both sides came from big, big gardens. So they already had a bit of an idea about, about planting and growing things. As a lot of people know, they’ve got a veggie garden. Crops are growing incredibly these days all over the country. And graziers, you know, they really know how to grow pastures. So growing trees was, was just another thing that we were growing. And there was all sorts of issues though, things that we had to learn about, about growing trees. It is another enterprise. It was another specialty. And we’ve had to innovate a lot of the things along the way, drawing on knowledge from overseas or from forestry industries even in Australia.

We’ve also developed a few things ourselves that are a little bit different to elsewhere. So part of that was my father actually, he designed and developed five different machine planters over the years, including the top one at the left there. It was a self-propelled tree planter operated by two people, one driving, one planting, and I believe it’s still going somewhere in South Australia. Just left the farm and kept going. And there’s a couple of others there. There was a skid steer operated one. There was even one that was towed behind a quad bike. These days we’ve just got one that we tow behind the tractor, but there’s still a lot of the tree plantings done by hand. There’s been a lot of field days on our place over the years, but around the time that my parents introduced the Hiko tray system into Australia, they also held a little field day, that turned into fairly major field day with over 6,000 people through the gate in one day. There was a real thirst for learning how to establish trees on farm, and it seems that there still is.

We’ve also, over time as the trees have started to mature, planted a lot of radiata pine on the place because it was cheap, but there was also the potential for products. And as those trees have grown, we’ve been able to take thinnings out of the forests. So we’ve been doing peeled pine posts and we’ve had a saw mill on the place for the last 18 years. So that’s something I think is new since Pip was last on the farm. In that time, you’ll see a bit later on how much carbon we’ve also sequestered in our forests in that short time. But we’ve been doing rough sawn timber. We were doing a lot to the Brisbane wholesale markets, and then last year we did our first major clear felled log harvest. Removing a lot of trees out of areas that were not ideal and we’re probably replanting in different areas, maybe different species as well. So as I said, we’ve hosted a lot of field days and events, sharing all the lessons we’ve learned. Frog dreaming was one of those events. It was an environmental conference for school-aged kids. We’ve also had engineered woodlands projects. We’ve got over six hectares of native biodiversity plantings now that are closed up permanently taking some of our land out of production, land that was low in production anyway. And yeah, we’ve done hell of a lot of fencing.

We’ve got new lane ways for management and we’ve hosted over the years a hundred plus international volunteers. My wife’s French so it was always easy to host French people. But yeah, gradually educating people far and wide and as Pip said, I’ve just come back from overseas. I was actually on the small farm of one of the backpackers that have been traveling over here. We’ve introduced quite a few to agriculture. They’ve come back and done internships on our place. And so that’s part of what we’re interested in, quantifying our natural capital. Carbon natural capital, the things that are really being talked about a lot at present. In the little animation on the right, that’s been put together by some of the people from Farming For the Future for us, just showing the growth in carbon since the late eighties.

The carbon levels sequestered mostly in our forests have probably nearly doubled since Pip was there. Initially we’re still planting trees, but I really see trees as the low hanging fruit when it comes to carbon on farms, but it’s not just carbon. There’s so many other parts to natural capital. Like I say to farmers, they should really be looking at the benefits they’re going to get in the first couple years through shade and shelter. The first carbon study that we’d ever heard about was actually one done by Southern Cross University back in 1992. Back then a lot of people couldn’t have ever imagined carbon becoming a tradable commodity. That carbon study was partly done in some of our pine forests.

We’ve seen full cycle from incorporating anything that’s sequestering carbon to a focus on natives only. Right back to where the natural capital modelling now is focusing on the whole system. So because farms are highly modified systems, we’ve got a lot of exotic pastures these days. So why not include exotic trees? And when it comes to natural capital, like I said, we’re part of the Farming For the Future natural capital modelling, and our farm was one of the initial 15 farms. They kicked off the interest in modelling natural capital, also social capital and business profitability. So that’s all fed into our resilience, through our droughts and through market highs and lows.

So as we know, farmers in Australia are business executives, and this is very different to when you travel overseas where a lot of farmers rely on subsidies for their businesses. But in Australia we have to run profitable enterprises. Australia’s I think second behind New Zealand when it comes to the level of subsidies. New Zealand are right down the bottom, so we’re beating them on something. Trees have to, like I said, have short-term benefits. It’s well and truly researched and published, the benefits of agroforestry, not only in forestry regions, but also in grazing and, and cropping regions. So it’s important to extend all this knowledge. We’re really lagging on extension in agroforestry in Australia, and that was something else. So that was quite noticeable. Traveling around Europe, they do have a lot of extension on agroforestry over there, but they do have a significant amount of more history behind them as well.

So we’re having to run our farm in a competitive environment. We can’t be splashing money around when it comes to planting trees, especially in the early days when there wasn’t much support for what we were doing. And so we’ve had to monitor all the way and again, fully integrate. We can’t be taking valuable grazing land out of production, especially when sheep and wool are our primary enterprises. So, a little bit of economics, treeconomics from our farm, initially we were looking at 15 cent seedlings of radiata pine seedlings. We’ve been growing in a forestry nursery just down the road from us. Native seedlings initially were quite expensive and direct seeding, there wasn’t much knowledge around direct seeding. But jumping forward to now, poplar and willow cuttings for something else that we were able to plant cheaply.

We’re now planting a lot more natives as you know, larger native nurseries have come up everywhere and are producing native seedlings a lot cheaper. But we’re now also direct seeding acorns from a lot of the oaks that were planted on our place. Because they’re coming off, they’re basically acorns coming off the oaks that were planted. They’re quite cheap, but oaks are also long-lived and similar to eucalypts, they also have quite valuable timber and again, we’ve been able to integrate them into our, but yeah, I’ve said here, currently native seedlings are around 5 to 7 dollars per seedling. I should update this because looking at whole tree establishment costs, we’re talking 10 to 20 dollars realistically, and nearly double that if you take into account paddock separations and excluding stock for the first few years while the trees are getting established. But understanding the economics about establishing trees has been really important. And like I said, we’ve been able to do what we have because we’ve looked at the cheapest possible ways to get trees in the ground.

This is hot off the press. We had a big log harvest at the end of last year during the wettest period my parents have ever seen in their life on the farm. So it was quite challenging. But the only way to find out how log harvests would work out in our region was to go ahead and do it. Unfortunately, 47% as you can see here, 47% of the volume ended up going to pulp. So that’s small pulp sized logs. It only made up 1% of the value. So there’s some interesting things to discuss around the timber market. 50 cents a cubic metre for pulp versus 600 a metre, currently $600 a cubic meter for rough saw timber off our saw mill. So yeah, obviously significant gains to be made if you can do an evaluating processing on farm. But yeah, those, even the logs averaged gross income per hectare around 150 to 220 dollars per hectare. So that is quite competitive compared to the grazing industry.

Like I said we’ve had to fully integrate our tree planning into our grazing enterprises. Forests are never in isolation, even if they’re over the other side of events. The co-benefits, whether it’s shade and shelter or ecosystem services or even just aesthetics for a lot of people, especially during drought years when the ground can turn quite bare and brown, even under the best managers, having trees to retreat into or to look at was quite significant when it came to the mental wellbeing on the farm. There’s plenty of data out there too on the reduction of dust loads as well, reducing the wind speed across the landscape. You have got to realise though that livestock will browse trees, you can’t stop them browsing trees and if they’re not browsing them, they’re rubbing against them or playing with them.

I’ve seen kangaroos and cattle, like young cattle playing with our trees, snapping them off. So if you’re establishing trees there’s a lot of things to consider around how you’re going to protect them while they’re getting established. Whether it’s the species of trees, the time you’re grazing, the pastures that are surrounding the trees, and a lot of our dams are fenced in. We’ve established buffer zones around all our riparian zones, all our creeks are fenced off. So those areas have been easier to exclude stock, and we graze them at certain times of the year during winter, when the impact on the water isn’t going to be as much. So yeah, I’ve made a note there. Just a funny little one, part of our fencing designs over the year, one of the philosophies that we have on our farm is that in establishing new fences, is that at any one time you only need to go through two fences to reach any part of the two gates, because we all love gates.

You only need to go through two gates to reach any part of the boundary fence. So we’ve extended a lot of our lane ways to make that possible, but that’s actually quite important. So as any good farmers know, being able to observe and get to any part of your property any time is an important part of the management. So that’s been a significant consideration in in breaking up our farm into our rotational grazing seasonal resilience. We’re here to talk about drought resilience and definitely through planting trees, my parents started to see differences in the way they were splitting up paddocks. And gradually, we’d moved to a rotational grazing management system with our livestock. And we started to see the benefits from that, not only through increased biodiversity in our pastures but also reducing parasite load as well as by breaking down some of those, resting those pastures and breaking down some of those parasite cycles.

So there’s obviously also been the shade and shelter again during droughts. Initially my parents were definitely looking at shade and shelter for stock during lambing or carving. And we’ve definitely lifted our lambing survival rates, ewe and lamb survival rates, during early spring. You can get significant changes in the weather. We are at a thousand meters. It’s easy to forget when you’re on a fairly weathered old flat table land slate, the New England tablelands. But we are being at a thousand meters high. We do get significant extreme weather events, whether it’s mostly in winter, but we do get hotter and hotter days in summer as well. And you know, if you’ve got black Angus cattle, they really enjoy getting in the shade of shade of trees on some of those really hot days.

Obviously the alternative enterprises during the drought when we had to de-stock, to be able to know that I was able to, if I had to de-stock completely, to know that I had that timber enterprise there to fall back on, we’d already proven that we could make wages for a couple of people out of that timber enterprise. And those timber prices are double what they were back during the drought. So now there’s just a little diagram. Everybody, most people in grazing these days might’ve come across this diagram on the left, developed by Des Lang back in the seventies, showing how important ground cover is for water, soil erosion, when it comes to water, but actually ground cover now includes trees and tree cover is important to wind erosion.

So again, during the drought, a lot of people that have done the best managing their pastures might have maintained a certain level of litter on the ground, but on some of those windy days there was no stopping that litter blowing away. So you were exposing the ground. So just being able to reduce the wind by a few kilometres an hour, to stop that litter or soil being lifted off the ground. That was quite significant. During the drought, again, there’s still a lot of work to be done, and the culture around agroforestry, like I said, there’s huge lack of extension support in Australia. Victoria and Tasmania are the only two states with any forestry extension offices at all. Not even agroforestry specific, but just purely forestry.

So there’s a long way to go in bringing that back into our support, whether it’s through private mans or through the government. Farms are unique everywhere you go in Australia, so it’s unique. Farms need unique solutions and ongoing management. There was a flurry of tree planting done when Landcare first started, and you can see the remains of that in lots of places, whether it’s small, private projects or national projects. But there was never very much consideration for the ongoing management of those tree planting projects. And we see that as really important. Luckily, we were modelling a lot of what we were doing with the Pines on the software industries, and we’d seen how the Kiwis were managing their pines going forward.

So thinning, pruning, that kind of thing, managing weeds in forests. But a lot of that was left out. So during the last couple of droughts, a lot of tree lots that hadn’t been managed or grazed or thinned, again, you were seeing just natural thinning processes, so there was a lot of dead trees and it was quite distressing to farmers that might have put some money into that, or even, I don’t know whether the government agencies noticed it, but that was public money that was just drying up and dying. So yeah, it’s really important, that ongoing management. As I said, farmers learning from farmers. We’ve been involved in the Master Tree Growers course developed by Rowan Reed, Bambra Agroforestry. And from that there’s been mentoring networks developed. So farmers learning from farmers is really important.

I think you’ll see that at any field day you go to, it’s usually what’s going on between the farmers rather than between the presenter and the farmer that’s actually more valuable. So yeah, you’re often working in isolation on the farm, so when farmers get together to compare notes on what they’ve been trying to do and look for solutions, it’s really valuable. So any way of fostering that is incredibly important. Fear of change. So why haven’t more farmers adopted agroforestry? Those of you that know me, I know that I’m keen on my white-water kayaking. This is a picture of my wife Millie, getting into white water kayaking. Whitewater kayaking can be quite scary, even on a small rapid river. But I think if my parents had known how many trees they were going to have to plant, just reach 23% tree cover, they probably would’ve freaked out and sold the farm, but you know, bit by bit, drip by drip, these things you learn over time and all of a sudden, as we go down a river, all of a sudden you’re faced with a 15-metre waterfall like this. This is just a step in the river for me these days, but when you’re starting out, it’s completely impossible.

So I think it’s really important to understand that changing to an agroforestry system, admitting that there is fear of changing, taking on a new specialty. So it’s really important that we bite off small bits at a time and help each other along the way. But it will take time. It’s not something that it can be done overnight. So, keep growing more stuff is probably the best advice I can give even, even forests, even if that is a giant frog forest. So, again, thank you.

Pip Courtney [00:41:03]:

That worked, didn’t it?

Michael Taylor [00:41:04]:

Did work, fantastic. Yep.

Pip Courtney [00:41:06]:

Michael, thank you so much. My visit with Landline to your property in the mid-nineties is still one of the most inspiring stories I’ve done. People ask me all the time, when are you going back? Your parents really did an amazing job because the dieback was devastating. Yes, that would be my first question. You’ve talked about the co-benefits of trees and yet still much of your region is less than 5% trees. So how do you get the message out that there’s all these benefits, whether they’re mental or more money in the bank, because you’ve got more lambs that survive? How do you get the message across? Why are they resisting it?

Michael Taylor [00:41:49]:

I think, like I said, just support knowledge. Extension, as you know, we’re very lucky in our region. We do still have quite a long a strong Landcare network and we do manage to get some extension through that. But I think things, look, Australia is a very market driven, government economy, dare I say it, but there’s, a number of market drivers at the moment that are quite significant. Carbon is one of those, the modelling of natural capital. So it is becoming more and more significant. You know, the banks are still sitting on the sideline, but they’re interested in what’s happening to the landscape and how that’s affecting the risk levels to agricultural businesses. So how farmers are managing their land so that when there are extreme events they’re able to continue farming and bounce back after those significant events.

So natural capital modelling is part of that. There’s some really big projects. As I said, Farming For the Future is one of those. Latrobe are also just in the final stages of modelling natural capital on farm-scale, there’s a hell of a lot of carbon projects popping up out there. Like I said, a lot of people ask me why I haven’t taken on a carbon project on our farm. There’s a few issues around the restrictions on farm titles and management going forward that I don’t want to burden my future generations with, or future farm owners.

Pip Courtney [00:43:48]:

Because those contracts are long.

Michael Taylor [00:43:49]:

They are long. I say I’m selling carbon in the form of timber for more than double what the carbon market, triple what the carbon market is at the moment. And there’s no restrictions on who or how I process, or sell that carbon. There’s a few little steps to jump through in labelling those forests for harvest. But that’s very small compared to what hoops you have to jump through, just get into a carbon project.

Pip Courtney [00:44:33]:

Michael, we’ve got a question coming from Slido. Just wondering if you could comment on the services you use for education information or support, was it private consultants, agronomists, NRM, government extension, etcetera? I think you’ve already said there’s a lack of extension, so how did you and your parents go and get the information you needed?

Michael Taylor [00:44:53]:

Well initially, it was radiata pine. As I said, the Kiwis have done a lot, they’ve got quite big small scale and large scale forest industries over in New Zealand. So a lot of the development they were doing, not only in the management of their forests, but also the development of the radiata pine genetics, that was somewhere we were looking. So there’s handbooks still sitting on my shelf from back in the day when that was available. That was all before the internet. I guess through trial and error we’ve developed a lot along the way based on, for example, the contour planting, some of those wild space agroforestry plantings grew out of ideas that had come from as far back as Yeomans with his key line systems. They’d been taken on by, oh God, I’ve had a blank. And some of the contour plantings have been done over in Western Australia, Ron Watkins, thank you, and then redeveloped to what we’re doing on our place. And I guess you see, some of what is being done through natural sequence farming stuff is, you know, developed out of that too. But like I said, unique, so unique farms require unique solutions.

Pip Courtney [00:46:29]:

And hats off to your parents for starting in an information desert. It’s not like that anymore though is it?

Michael Taylor [00:46:34]:

That’s right. Look, I mean, we’ve looked to overseas, whether it’s North America or the Scandinavians for a lot of the forestry technology. There’s not much of that small scale forestry technology in Australia. So we’re at a stage now, like I said, we’ve started harvesting a lot more trees, so we are looking at what we can do in terms of value adding. Our saw mills actually are Mahoe Mill out of New Zealand, so what can I say? Kiwis have done a lot for us, but yeah, it was all the native forestry stuff, still a lot of innovation and learning happening there. The, you know, Biobank, fields and virus solutions in Uralla are doing a lot of research into to native seed germination. It’s actually been the mining industry that have pushed along a lot of those things.

So they’re looking at how they can get large scale restoration projects on their mining sites done. So whether it’s drones, planting seeds or managing, as we know, drones are being used more and more in agriculture now. So yeah, look, it’s from wherever we can find it, and the internet’s wonderful. But the Landcare network has been great. There’s been some support through our local land services, but a lot of the time we’re having to, you know, we’re, we’re very lucky in New England too, we have the university nearby, so we have a lot of academics doing research and obviously they’re looking farm wide too. They’ve used our property for a lot of experiments over the years. It’s like a big laboratory.

Pip Courtney [00:48:16]:

I’ve got another question here from Slido. Michael, what you are doing is so inspiring. There’s so much complexity in the various work fronts that you are managing. Any advice for how to start managing those multiple fronts?

Michael Taylor [00:48:29]:

Start small. Look, my biggest failure was one year, I endeavoured to plant 10,000 trees and I probably lost over 80% of those through some really hard winter conditions and then two successive droughts. That was really, really hard to see so many of those trees that I’d, you know, it was my hard-earned money that went into to those. Look, yeah, so start small. There’s some exciting developments and announcements to be made soon. We’ve been discussing with selling NFTs, linked to real trees in the real world. I don’t know whether NFTs are a little bit hard to get your head around, but there’s a lot of private money out there and private incentives that people really can see the need for trees on farm.

So there’s potentially some real money coming for trees, getting more trees onto to farms and yeah, like I said, there’ll be some more announcements soon, but with part of that, advising them has to start off small. They were talking really large numbers of trees, but you really have to start with an amount that a farmer can manage. Like you said, the complexities on farm are already quite large to take on another enterprise, trying to keep something else alive as we’re going into a drought or is there another flood just around the corner? So yeah, keeping the risk low.

Pip Courtney [00:50:18]:

I think all the Ag reporters like myself just went, oh, no, we haven’t worked out blockchain yet. Can we stop being non fungible? The NFTs please? Another question here. Uh, do you find the radiata pine had any impact on the land and soil longer term? Did it assist any other enterprises like animals or crops as they were growing?

Michael Taylor [00:50:41]:

Yeah look, ecologists are often blown away. Their minds are blown when they come through some of our pine forests, we have the largest native microleana pastures growing under our pine forests. And that always blows their mind. Over the years, we’ve had koalas living in the pine trees, a lot of the native birds and insects live in our pine forests. We’re managing our pine forests. They’re not monocultures. They’re thinned and managed in a way that we’re still getting pastures. The shelter again, like I say, has been one of the biggest things. Whether it’s in the middle of summer or winter, we’ve always got green. The green grass isn’t necessarily always over the fence. It’s sometimes under the pine trees, so, yep.

Pip Courtney [00:51:38]:

That’s fantastic. Well, Michael, thank you so much for coming along. I would love to come and bring a Landline crew and do an update when you release your anytime secret squirrel information. Keep me in mind. Okay, thank you. I think you inspired a lot of people particularly with that cover shot with the trees. So congratulations and enjoy the last month of being the 2022 Farmer of the Year.

Michael Taylor [00:52:00]:

Thank you very much.

Pip Courtney [00:52:01]:

Thanks again. That was sixth-generation wool grower and 2022 Farmer of the Year, Michael Taylor. The benefits of collaboration and information sharing in the Ag sector are well known. Embedded in each of the 8 Drought Resilience Adoption and Innovation Hubs across the country, are Regional Soil Coordinators. They play a vital role in improving soil health in their regions and helping farmers extend those improvements into drought. The Regional Soil Coordinators recently participated in a Community of Practice field trip in Tasmania. Here’s some of that trip and the background behind the networks involved.

[Video voiceover begins]

Liana Williams [00:53:06]:

The Future Drought Fund has been pivotal in enabling collaboration across research, development, extension, commercialisation, and adoption. The Hubs is one part of that. The other part of that in the Future Drought Fund is their programs in community impact in farm business resilience and helping regional drought resilience planning. The other thing that the Future Drought Fund is enabling is long-term change within the Australian innovation system. By pulling all of these organisations together, by encouraging us to collaborate rather than compete, it sets us up long-term for a much better agricultural future. And from that we’ve funded 17 projects across the state and they’re diverse because they reflect the needs and priorities of our partners and our communities.

Sandra Knowles [00:53:50]:

So at the moment, Tasmania may not look like it suffers from drought. We’ve just gone through another period of floods, which has been very difficult for our growers. However, we all know what’s coming and we all know we need to be prepared for the next climate disruption. And we believe that that will be drought again. So we see resilience in climate resilience as pivotal to any future business planning.

Liana Williams [00:54:18]:

Soil and soil health is really critical to drought resilience and agricultural resilience more generally. So embedding the Regional Soil Coordinators into the Hubs make sense because our goals at the end of the day are very shared.

Abby Jenkins [00:54:33]:

We run these field trips roughly every quarter and predominantly they’re for the Regional Soil Coordinators, to help them with that networking to meet the people who know the experts in their field. It’s about trying to gather information from the research fraternity and make that more available to the people who will then use it.

James Stronach [00:54:51]:

One of the strengths I think, of this Soil Coordinator program and these types of events is that we are building a network of knowledge and a network of interest. And what we’re also building is a pipeline of talent. Future Drought Fund gives us the ability to work with commercial farmers to help them achieve their commercial objectives, but also to build those longer term assets and those longer term sustainability outcomes. We have programs like Farming Forecaster. An idea that came to us from a grower.

Tim Ackroyd [00:55:24]:

Three years ago, we ran a pilot on the East coast, which is an area which is prone to drought in Tasmania. Now we got funding from the Future Drought Fund to run a state-wide program for Farming Forecaster. We intend to add another 30 sites onto the 13 sites that were established through the pilot. So Farming Forecaster comprises a couple of elements. One is a soil moisture probe and rain gauge, which is situated in a dryland paddock. And they give farmers an understanding of soil moisture levels, their bank of soil moisture, where it’s sitting in the profile and how that might affect their decisions around things like sewing new pastures, how much stock to run on a pasture. The second component, which is more of the forward planning component, is something called a pasture forecast. One of the things that stands out about this tool is that it’s one of the few tools, if not the only tool, which provides a 3 to 4 month projection on pasture growth trends, which is a really, really critical part of drought resilience and drought planning, knowing how much feed you have ahead of time and how to match your livestock to that available feed.

Tim Ackroyd [00:56:30]:

So obviously in a drought, the last thing we want to do is have too many animals that we have to feed, which is very expensive, or we have to push them on the system we already have. And then we get trouble with overgrazing. We lease top soil through exposing that bare soil and that landscape takes us a lot longer to heal. We see Farming Forecaster as a really powerful decision support tool that helps with one of the most fundamental decisions that farmers actually have to make.

James Stronach [00:57:00]:

The more that we can work with reducers to improve their tools, their knowledge, and just give them that capacity to extend into drought, uh, and survive drought. It just benefits them, it benefits their communities and, and ultimately benefits the landscape as well.

Sandra Knowles [00:57:15]:

For us, it’s exciting to be able to actually get out on the ground and actually have a bottom-up approach to what we build within Tasmania for climate resilience.

[Video voiceover ends]

Pip Courtney [00:57:41]:

What a great session from Michael. You can see why I want to go back there with a camera crew really quickly. We had so many questions coming in through the Slido app and I’m sorry that we didn’t get to them all, but there were a lot and so many people joining us from around the country. It is so great to see all over the place and keep those questions coming in on Slido during the day and we’ll try to get to as many as we can. And that was James Stronach from NRM South in Tasmania. The soil Community of Practice and Regional Soil Coordinators are funded through the Natural Heritage Trust. Now to a project in the Northern Territory, rebuilding the productivity and drought resilience of grazing lands by slowing the flow of moisture through the landscape.

[Video voiceover begins]

Willy Brown [00:58:50]:

We’re sort of about 150 kilometres, or an hour and a half out of Alice Springs on the sort of Northwest, along the Tanami. And we’re on the northern side of the West McDonald Ranges. So we’re about 2.8 million acres. We run about 32 to 35,000 head of cattle across the property. Season depending. Years ago there was a lot of big droughts and there was not too many people understood stocking rates and stuff for the land. And then after droughts had put too many cattle on it and they’d become big areas of scolded country, especially after bush fires and then you get heavy rain and it washes the top soil off the country.

Lance Mudgway [00:59:26]:

I’m a hydrologist so obviously drought’s just part of my job. You know, we call ‘em droughts but it’s just a natural part of the cycle, part of the landscape. Part of the climate. We’ve changed things to make it worse. That heavy stocking has removed vegetation and then suddenly you’ve got water just flowing through, dehydrating the landscape.

Dave Gallacher [00:59:46]:

This rehydration project is funded from the Future Drought Fund. The Charles Darwin University is providing different forms of in-kind support and house, the Drought Hub that are managing it. We’ve had enthusiastic uptake from the Hewitt Cattle Company, and they’ve provided a couple of their properties, Narwietooma and Glen Helen. We’ve got the Central End Council, so Desert Rangers Aileron, Ahakeye and Ti-tree Station.

James Glenn [01:00:13]:

During the wet season, that’s when we get the heaviest rain. And so the rain just goes through the river and doesn’t even slow down because these are where the erosion starts.

Lance Mudgway [01:00:29]:

The catchphrase is slow the flow. So we’re basically trying to hold moisture up in the landscape. With these in size creeks, the water tends to just accumulate in the creeks and then run off downstream, which we don’t want to happen. So we are providing little chocks in the creek to hold that water up and create a bit of a step so the water held up behind one structure or reach the top of the next structure, which protects that structure. So when the water flows over it, it lands on water, so it dissipates the energy and that stops the erosion. And that storage of water allows a deposition of material sediment, seed organic matter into the creek line back up to what it naturally would’ve been, which allows water to spill out over the floodplain. At the same time, we’re building some structures a bit bigger, which actually brings water up above the bank of the creek and actually spills it out into a contour, which takes it right out onto the flood plain. And that just makes the whole system a lot more resilient.

Willy Brown [01:01:22]:

And I’ve seen it one day in a field day and I said, well, one day hopefully I’ll be able to, you know, put something like that together. With the help of the Hub and the drought relief mob.

Lance Mudgway [01:01:33]:

I think it’s really important that we not just do it on one property because dynamics of the hydrology is very different in different properties.

Tim Wiley [01:01:40]:

We’re on Aileron Station, which is about 200 kilometres north of Alice Springs. So we’ve been working with the local ranger group that represents the local people. We’ve got the elders to come have a look at this site and they talk about the rainbow serpent. And the rainbow serpent is water and water is the most powerful force in this landscape. And if the water’s going too fast and high energy or angry as they would say, it will do damage. This fits in really I find just perfectly with their traditional knowledge or our outcome from this is the local ranger group develops all the skills needed so they can go and do it themselves. We took them out on the first day and we gave ‘em half a day’s training on that little bobcat of how to build structures and then we had to go off a couple of days later we heard that they’d been out and done more themselves.

James Glenn [01:02:31]:

So we want to start to get in and roll for our mob, that gonna come along and show that experience as well.

Lance Mudgway [01:02:43]:

It’s quite early days yet, I guess. In a way we’ve been lucky to have some strong rainfall in January, which tested the works that we’ve put in and glad to say that the works have held up in the main, very well. Over at Glen Helen, one of the works there is already showing massive results. It’s just a simple rip line contour, which in that rainfall event, has trapped sediment and trapped seeds. And there’s been growth around that within sort of five to 10 meters of that rip line re-establishing pasture, which was completely bare beforehand, but there was stamp areas for quite long periods after the rain, which wouldn’t have been there before, just feeling the dirt which had a lot of moisture in it, so it’s holding that water up more in the landscape than that water would’ve just gone straight down the creek.

James Glenn [01:03:28]:

We had a fair bit of rain here during Christmas as well, you know, I thought that’s going to be washed away. But yeah, that’s still the packing from the machine. We actually pack it all there and I notice where they’ve been able to slow the river down, all the side, the long side of the river is start to come back a bit. So yeah, it’s starting to, you know, getting that fertiliser back into it.

Tim Wiley [01:03:55]:

So this project has been set up over the longer term to give us a very good handle on economic returns.

Dave Gallacher [01:04:01]:

The notion being if you can spend a certain amount of money in diesel for a bulldozer and time to build a certain amount of earthwork, then how much land can you actually bring to a higher productivity from that? So getting that balance right even if it ended up that it came out economically marginal, there’s still a massive ecological gain.

Lance Mudgway [01:04:27]:

The overarching goal of rehydrating landscapes, particularly in the rangelands, is to enable pastoralists to see that they can be sustainable and also be resilient to drought. The project’s not about just doing one little demonstration, it’s about providing the skill set as well. We’re really factoring in the fact that drought happens and that we are just saying, okay, well let’s just make the landscape more resilient to that drought and that means the pastoralists are more resilient to it, and they can continue to operate and make the right decisions.

Tim Wiley [01:05:01]:

What we do here is important, but it is of no value unless we share it with other people and they learn and it helps ‘em improve their land management.

Willy Brown [01:05:09]:

It’s a win-win for everyone. It’s a win for the environment and it’s a win for us because we get more kilos on our beef because we’ve got more grass.

Tim Wiley [01:05:16]:

So funds from the Future Drought Fund for this project I think have been critical, not just for here on these properties we are working on. I think hopefully we’ll get some very significant outcomes. So the value of a project like this is really about demonstrating how we can scale up once we get up to large areas, tens of millions of hectares. If we can green up this landscape, it’ll be cooler and it’ll be wetter. If we can green up the centre of Australia, the Murray Darling will get more rain. So at scale, we can actually come to have some control over climate change.

[Video voiceover ends]

Pip Courtney [01:06:13]:

That was Tim Wiley, senior rangelands scientist at Tierra Australia, talking about a project helping green the Red Centre, thanks to the FDF.

[Recording ends]

**Acknowledgement of Country**

We acknowledge the Traditional Custodians of Australia and their continuing connection to land and sea, waters, environment and community. We pay our respects to the Traditional Custodians of the lands we live and work on, their culture, and their Elders past and present.

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