# Science to Practice Forum 2023

Day 1 Session 1 transcript

(Duration 42 mins 10 secs)

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## 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 1 of the Forum, session 1, Setting the scene for sustainable agriculture.

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 [00:00:03]:

To set the scene for sustainable agriculture, a senior climatologist from the Bureau of Meteorology is up next. Much of Australia has just shivered through the coldest May minimum temperatures on record, but the chilly end to autumn doesn't necessarily mean we’re in for a cold winter. Here with some climate perspectives on matters relating to seasonality and a look at the El Nino and La Nina climate patterns is Felicity Gamble.

Felicity Gamble [00:00:31]:

Good morning everyone. It's great to join you today to talk science in particular weather and climate science for agriculture, fisheries, and forestry. My name is Felicity Gamble and I'm a senior climatologist at the Bureau of Meteorology. And I'd like to acknowledge the Awabakal people upon whose land I'm joining you from today, the elders past, present, and emerging, and also acknowledge their intimate connection and knowledge of our land, weather, and environment.

So, when we think about sustainable agriculture, one of the major considerations is climate, both in terms of natural variability, which sees us go from those widespread dry, conditions to prolonged wet conditions from one year to the next. What no doubt prompted the classic words of Dorothea Mackellar of droughts and flooding rains. But we also need to think about climate in terms of longer-term shifts in the climate or climate change. So this is where I thought we could start highlighting that difference between climate variability and climate change.

When we talk about climate variability, we are referring to those short-term fluctuations in rainfall or temperature from one season to the next, or one year to the next. And these fluctuations are generally influenced by natural processes, which we call our climate drivers. So as Pip mentioned, we have El Nino and La Nina, we also have the Indian Ocean Dipole and some other smaller secondary drivers too, which I'll talk a little bit more on soon. So, I've depicted these variations in this diagram by the orange wiggly line that the dog is taking, out on its walk with its owner. So sometimes it's above the long-term average, sometimes below the grey line of its owner though represents the longer-term trend. And it's probably easiest to think of this as temperature given the steady warming signal in our temperature. But this reflects a change in the mean state. So alterations that can occur over longer periods such as decades and can be a combination of both natural and man-made processes. If there wasn't this longer-term change, we'd see that grey line as horizontal rather than on an angle. So keeping in mind it's a very simplified graphic, but it's a good way to think about what we mean when we talk about climate variability versus climate change.

And here we essentially have that same graph, but with actual data. And this is taken from our State of the Climate report released last year. The graph shows the annual temperature anomaly for Australia since 1910, for land in the orange colour and for oceans in blue. And I've overlaid the grey line indicating that longer term trend. So today I'll be focusing more on climate variability, so that wiggly orange and blue line and what tools we have to manage those year to year or season to season fluctuations tomorrow afternoon. Um, however, my colleague Steph will be addressing climate change and what we can use to help plan for, mitigate or adapt to those longer-term shifts in our climate. So we have here a summary slide on what causes Australia to have such variable weather. Many other nations have a much more consistent rainfall regime with little year to year variability.

So it makes agricultural planning pretty straightforward. But in contrast, the Australian farmers typically have a pretty rough time managing the more erratic seasonal rainfall and have had to learn how to manage this variability at all decision points within the agricultural calendar. A high rainfall variability in Australia is driven by changes in the large scale atmospheric circulation. And these changes are a result of a combination of active climate drivers at play, so how they interact with each other and the resulting influence on our cloud and rainfall patterns. So as mentioned in our region, as most of you will know, we have El Nino and La Nina, and obviously the neutral phase. We also have the Indian Ocean Dipole, which is similar to El Nino and La Nina, but driven by temperature patterns in the Indian Ocean rather than the Pacific. We also have shorter term drivers that can impact more on weekly to monthly time scales.

These are the southern annual mode or SAM and the Madden-Julian Oscillation, or MJO. Between all these drivers can mean that we might see, for example, a greater number of east coast lows forming or a persistent, um, period of high-pressure systems or an active or break periods of the monsoon or driven by the presence and combination of these drivers. And it's our understanding of these drivers and finding ways to model them over the, the last few decades that mean we now have skill in seasonal prediction. Our dynamical climate model here at the Bureau takes into account all these interactions between the oceans and atmosphere and land to determine both how the drivers are likely to evolve and also how they're likely to affect our rainfall and temperature patterns in the coming weeks, months, and seasons.

So instead of talking dryly about our climate outlook service and pointing to URLs and screenshots, though we'll do this a little bit at the end, I thought I would reference a quick case study in the utility of our climate outlooks or long-range forecasts. So this photo is of some wheat fields in Birchip, Victoria, where our previous speaker, comes from. Um, and, but this is back in early April, 2016. The rainfall map on the right shows the rainfall decals, the difference from average for the 12 months leading up to that point in April 2016, and Birchip is shown by the yellow circle. So at the time this photo was taken, rainfall had been extremely low, thanks to the 2015 to 16, El Nino and soils were very dry. Then the outlook is released from the Bureau. So here it is on the right showing the chance of above median rainfall for winter. So while the soils were really dry, rainfall had been very low, the outlook indicated a very high chance of above median rainfall. So Mr. Faria there in the photo jumped into his planter, and out he went into the fields and the wheat crop got planted in clouds of dust.

And the outcome. So here's that same field, but we're now in July 2016, and that's following three months of above average rainfall from May to July. Shown in that map on the right. August, October also turned out very wet across much of Australian. And that pattern was influenced by a weak La Nina, and a strong negative phase of the Indian Ocean Dipole. It's a very happy grain farmers not just here in Birchip, but really across the eastern cropping regions by the end of 2016. Now, of course, I've picked an outlook that verified, as well as one that I had photos for. And it's important to note that outlooks aren't always as spot on as this one, but it's also important to iterate that these are probabilistic forecasts. They're looking at the likely shift in the rainfall patterns based on the dynamics of the oceans and atmosphere.

And while it may shift the probability of certain areas receiving above median winter rainfall like it did in Birchip in 2016, it doesn't guarantee it. So even though this outlook, indicated a high chance, I think it was around a 75% chance of above median rainfall, that does still mean there's a 25% chance of below median rainfall. But these outlooks from the Bureau's model are right more than they're wrong and can therefore be used to much greater benefit than if you are simply relying on climatology, particularly in a changing climate. So using them over the long term provides overall benefit even with the odd missed forecast.

So now to some more details of our long-range forecast service. With our rainfall and temperature outlooks, just like the ones I just showed in our case study, available by clicking on the, what is currently a brown map, so indicating dry conditions in the coming months in that top left corner. But we also have many other products available from tropical cyclone outlooks to information on the climate drivers, so what's happening with El Nino, La Nina, the IOD, that's updated fortnightly. We also have fortnightly videos of climatologists discussing the outlook in recent conditions and information on say, the northern rainfall onset and whether it's likely to be earlier or later than usual, focusing a bit more on our long-range forecasts. So this service is always being improved on. So whether it's the background modelling or the products available, the most recent additions to the service include forecasts for the chance of extremes. So the chance of getting unusually high or unusually low rainfall or unusually warm or cold temperatures. And that can be really useful for different aspects of agricultural decision making. The forecast data is available down to the grid box and not many people know, you can just click on the map and get information from that particular location on the map, and that will give you forecast data for your grid, your exact location and that some of that data is shown in these graphs, in the centre of the slide, all of which can be used to help manage climate variability and reduce climate risk in the coming weeks, months, and seasons.

So before I go, I'm just going to mention the AgriClimate Outlooks, which are being developed by the Bureau of Meteorology for the Ag sector via an Agricultural Innovation Australia initiative. It's currently in the end user engagement phase. So if you are interested in being involved, there's an email there on this, on the slide, agriculture at bomb dot gov dot au, or get in touch with your RDCs.

And lastly, a quick plug for our session on Climate Services for Agriculture or CSA, which is a fantastic tool that includes not only seasonal forecasting information, but the main thing about it is it includes information on how the climate is changing via point location using climate projections from the IPCC suite of models. So that top level modelling for specific locations across Australia. So that sessions tomorrow at around 2:15 with Stephanie. So that's all from me. I'll just finish off with a few useful links. So thanks very much for your time.

Pip Courtney [01:11:21]:

Thanks Felicity. And I'm calling it early, I can't believe it’s not even midday on Day 1, but you win for the best graphic with the dog and the owner. Thank you, Felicity. It really made a great point, but you might have some stiff competition on Day 2 and 3. Thanks very much Felicity. And join us tomorrow to hear about Climate Services for Agriculture or CSA, an online platform developed by the Bureau of Meteorology and the CSIRO to help farmers and communities better prepare for climate risks.

Now, people are joining the forum right from right across the country today. Have you noticed where, if conditions are drying out where you are or is it raining? Can you share your answer using the Slido function on the bottom right of the page. You heard from the Bureau the need for agriculture to build resilience to climate change now to a project near Wagga Wagga in the heart of the New South Wales Riverina that's giving farmers the confidence to sow crops early on the back of changing rainfall patterns.

[Video voiceover begins]

Claudia Powell [00:12:50]:

Riverine Plains is a farming systems group based across Wagga to Ngambri and Jerilderie across to Wadonga. We specialise in farmer driven research that delivers on the ground benefits to our members. Our members and farmers in the region are from drought prone areas, so we wanted to ensure that they're well equipped to prepare for drought in wetter seasons, especially the last season that we just went through. The Future Drought Fund has been able to bring multiple farming systems groups together, um, which allows us to reach a huge geographical footprint across the region. We've been able to take the research that's been done in these replicated trials and basically put it in real life scenarios with real farmers.

James Brady [00:13:36]:

We are 55 kilometres east of Wagga. We farm just under 4,000 acres. We've run quite a few composite ewes, joined to terminal rams, Poll Dorsets. The purpose of this trial and these 2 paddocks here behind me is based around farming systems and optimal water use sufficiency. So in simple terms is can we grow more grain per millimetre of rain?

Ehlena Lea [00:14:01]:

So the overall hope for this trial was that we would take these proven drought measures and put them on a larger scale so that farmers could come in, see it, and then implement it back on their property with the confidence that they've already seen it been proven.

James Brady [00:14:17]:

When we moved here 20 years ago, grazing wheat and grazing canola crops were very minimal and everyone would just basically wait for the opening rains to germinate your sub clovers and other annual pasture species and lucerne to get going to create your winter feed. Over time as we've discovered, you sow your grain-only crops and they grow pretty well, but you've got all this green biomass of feed sitting in a paddock knowing you can't fully utilise.

Ehlena Lea [00:14:47]:

FarmLink is a non-for-profit organisation. We work in extension and research and development. So the three main concepts that we've been looking at are ‘N’ banking, nitrogen banking, diverse cropping, so your legumes or your lupins. And then we also have been looking at planting early and planting late. In terms of the diversity part of this demonstration project, the farmer has been finding that he has more crops to feed to his sheep, so he's got vetch in the ground. He's also been finding that the moisture in his soil is higher after planting a diverse crop. He's also finding that he has a little bit more nitrogen in the soil for the next crop that he's going to be putting in.

James Brady [00:15:26]:

So we've been growing a lot more grazing wheats and our grazing canolas, and we can sell on our opening rains in February, March. And over time we've become more confident in the grazing canolas. And as we've seen, we're harvesting still an amount of grain per hectare off our grazing crops compared to our grain only crops, which are sold a lot later. As our rainfall pattern is changing, I believe we appear to be getting more February, March rain and a little bit less April, May rain, which traditionally you would sow your grain only crops in May, June. We can sow quite confidently on the early rains and create some extra feed for our sheep and winter, which then enables us to increase our carrying capacity of our sheep by doing it for 13 years. Now. We are ready to sail on the first rain in February, March, and the crops germinate quite quickly away from many soil and root diseases, and we'll have feed within 4 to 6 weeks most years if we can get a good rainfall event. We've just seen how many worms, are here under the stubble load and the soil health that's sustainable. I suppose it gives me peace of mind that I know we've got good moisture here. We can sow across a wider window where we've already had the opportunity to sell in February, March. We know we've got sheep feed coming on the next 5 or 10 mils of rain. It's going to keep growing and growing.

Ever since I left school, Australia's been talking about drought or in in major droughts. It's always going to happen. So as long as we can prepare for the next one by having extra fodder on board, extra grain to feed your sheep or be aware of, you know, spring rainfall not being quite as good, we can prepare for it.

[Video voiceover ends]

Pip Courtney [00:17:26]:

That was James Brady, owner of Bradford Park, talking about a trial that's improving soil health and farmer's peace of mind ahead of drought. And Slido, you are going off. We have very dry upper Hunter, dry, cold and wet, slowly drying, raining about average drought factor 8 to 9 in Hobart, very wet, a hundred mills in the last 24 hours. It's giving us a good indication of what's happening out there. So please keep adding to Slido, ask any questions and we'll get back to you every now and then during the day.

Next up, it's just before 11 and time to introduce you to today's feature speaker. And to do that, let's cross to Worimi Country in Gloucester on the mid-north coast of New South Wales to meet agriculturalist and researcher Joshua Gilbert. Josh is a Worimi producer and First Nation's farming advocate. His research interests include sustainability and climate change, Aboriginal culture and native foods, and Aboriginal engagement and inclusion in agriculture at large. He's a senior researcher at the Jumbanna Institute, a Food Agility CRC scholar, and a PhD candidate at Charles Sturt University. Josh is on the Boards for Indigenous Business Australia, the New South Wales Aboriginal Housing Office, the Australian Conservation Foundation, KU Children's Services, and is the Aboriginal co-chair at Reconciliation New South Wales. Josh is going to tell us all about some opportunities to include First Nations’ voices across the agriculture sector and give you some insight into the past, present, and future of engagement. Good morning, Josh, and over to you.

Josh Gilbert [00:19:20]:

[Gathang language] Good morning. Hello. Hi, my name's Josh Gilbert. I'm a Worimi man from the mid north coast of New South Wales. And I'd like to start by acknowledging and paying my deepest respects to elders past and present on these lands on Worimi Country and extend that to all the lands that you're joining from right across the country. For me, this topic and idea of Indigenous agriculture is so important to how we think about Australia going forward and what the narrative is in the way we tell ourselves about our connection to Indigenous people and how we think about the, the knowledge that sits there lying almost dormant in the minds and hearts of not only our Country, but our old people. I'd like to start by thanking the Future Drought Fund as well for their very gracious introduction and opportunity to present to you today.

For me, this is a topic that is often left off the table. It's often something that we don't want to talk about, but for me, it provides a really unique opportunity to understand how and, and why this landscape is what it is, and what the opportunities might exist into the future. I'd also like to acknowledge Charles Sturt University and Food Agility CRC, who are supporting my research and thank them for their commitment to this, these topics, and these ideas as well. For me it's these kind of fundamental partnerships that we need to keep going and having these conversations to really think about what the next 60,000 years will look like on our Country.

So, I wanted to start by sharing a little bit more about where I'm from. For me, I live in Gloucester, and Gloucester is kind of some of the first lands that was primarily earmarked by the Australian Agricultural Company for exporting wool back over to England and also to help feed the colony. I guess for me, when I think about this landscape, it's some of the first lands that really acknowledges and thinks about the way in which modern agriculture really looks today. Obviously things look a bit different, but the primary thinking around feeding populations and exporting agricultural commodities overseas really started here on Worimi Country. And it was a million acres at the time that was gifted to the Australian Agricultural Company, AACo for their primary use, to continue farming and supporting these ventures here.

My family connection to here runs really deep. We know Indigenous people have commitments right across Australia. For me, this Country is where my Aunt carries a picture of the first recorded birth in the caves and the mountains behind me with her at all times. As a testament to our commitment and our history here, the mountain range out just out these windows here is a men's site that's really important to our people. And over to the other side, the mountain range over there was a women's site. And this Country is really, I guess, a way in which we connect here, understand deeply and really think about what this societal shift is going to need to be to continue engaging and continue farming on this Country sustainably. Over the last few years, we too, like many parts of Australia have, have experienced severe climate change. And, for me, the stories of drought, fires, and also severe flooding, we had 2 floods here in the main street in the last few years. It is really, I guess a, a story that connects with us all that we know that these severe climate events are becoming more and more frequent and that we need to continue to do things about it.

In my mind, when we think about what the future is going to hold, we really need to start reflecting on what actually happened on Country, how we've shifted and amended it to create agriculture, how it currently looks. And for me, there's a real beauty in this, that our connection to, between Indigenous and non-Indigenous people really stems and starts from this partnership that happens on Country. For me here, on Worimi Country, we did this in a way where my Dad's ancestors stayed and actually started farming alongside non-Indigenous people, started farming sheep and sharing the best of their Indigenous knowledge, the grass systems and where they find water and what the climate movements were going to be to ensure that we're farming in a really sustainable and new light here. That's not to say that we didn't have learnings that there wasn't a hardship, there wasn't trauma that happened here, but there is a real respect, I guess, of the importance of partnering around an industry to get the best out of Indigenous knowledge and non-Indigenous farming systems. And for me, that's the passion and the story that we need to continue telling right across Australia today.

I'm going to share this slide, and for me, this fundamentally provides an understanding as to what the current state is and why I think these partnerships are so important for me. When we think about Indigenous agriculture in Australia, we often don't understand the size and scale of what this looks like and what the, why these partnerships are so important. And what you'll see there in the first dot point is that the Indigenous estate represents approximately 60% of Australia's land mass. That's to say that the 3.5% of Australia's Indigenous population have native title and other legal rights, over 60% of what we know as Australia and the Australian federal government's commitment to closing the gap sees to increase that by another 15%, through further native title determinations and crown lands being handed back to Indigenous people. So, what we effectively have is a position where three quarters of Australia's land mass, much of which will be relied upon for agriculture, where it's not now certainly into the future, is owned by 3.5% of a population that has a very fraught, and difficult conversation to still left to be had with Australian agriculture as that stands.

And we know through the Northern Australia CRC, that much of the production that's happening in the Indigenous estate actually doesn't benefit Indigenous people. So there's a huge fundamental shift that needs to happen there. We also know that there's no national data set as to Indigenous farmers in Australia who's farming, what they're farming, where they're located. And only just recently has the Cotton Research and Development Corporation done research to ask whether people want to identify. And for me, that's something that all the remaining research and development corporations will have to undertake into the future for me, that that provides the opportunity to make sure that we're supporting Indigenous farmers through their efforts and that we're really acknowledging the unique understanding, perspective, and policy positions also that Indigenous people need to continue farming in a really sustainable way. For me, the conversation in Australia really focuses on bush foods when we think about Indigenous agriculture, and that's a conversation really unique to Australia.

It's about 40 years behind the United States and our colleagues over in New Zealand. But when we kind of assume that Indigenous people will just have that bush food industry carved out for them, the reality is very different with less than 1% of the revenue going back to First Nations businesses, that's something fundamentally that needs to shift and we need to support more Indigenous businesses to take on the bush food sector, but there's also some great stories that are happening. We know that there are Indigenous farmers out there who are winning agricultural shows and getting the top prices for their breeding cattle sales. These are the farmers that reach out to me and share their strength, share their stories, and these kind of real fantastic things that they're achieving. And for me, there's a huge opportunity to showcase more of this work.

But we know that there's challenges here, that there are less than 5, the number 5, Indigenous agricultural graduates across every university in Australia. And that's a real pathway that needs nurturing and we need to help support that going further. And we know that the agricultural sector has really lagged, in terms of the story of Reconciliation Action Plans and ESG requirements to meet the ongoing social license pressure that farmers will feel. So we actually need to build this deep pipeline of talent and business startups to help this commitment going forward. This is a huge opportunity, I think, and something that agriculture will have to do quite proactively very quickly, because we know that the current, Indigenous population within that broader agricultural sector only make up around 2% of the workforce. So there's a huge shift that needs to happen to take that to 3.5% percent reflective of broader society.

And probably the last thing I want to leave you with is this comment. And I'm very lucky with my research to have some incredible supervisors, and I was gifted this, this quote and this idea that we need to think about Indigenous people farming today as being authentically Aboriginal as what they would've been over time that we're essentially the same people, but just a people in change. We shouldn't limit our thinking of Indigenous agriculture purely, I guess, on the lens of somebody's Aboriginality or what they're farming. We need to appreciate that Indigenous people are doing a whole range of different agricultural practices and recognise who they are, support them in their journey, and really forge these partnerships that we need to continue farming sustainably across Australia in our language, Gathang, that we speak here on Worimi Country, we finish our acknowledgements and welcomes with the words Gathay Nyiirun, which means let us go together. And for me, that's the fundamental partnership that we need to create between agriculture at large and Indigenous stakeholders to get the best results into the future. Thanks so much for having me. I really appreciate the opportunity.

Pip Courtney [00:30:26]:

Thanks so much, Josh, and if anybody's got any questions for Josh, hit Slido. Let's get some questions happening. But before you get in there, I'm going to ask you one, Josh, that number, I just want to check, less than 5 tertiary grads who are Aboriginal have graduated in agriculture?

Josh Gilbert [00:30:47]:

Yeah, that that's correct. Less than 5 across the last, you know, spanning the last, at least 10 years that we've had less than 5 across every university in Australia. So, there's projects in place now that are trying to support that and scholarships that we're trying to get young Indigenous kids to take up to try and expand that. But fundamentally, we have a space where, if we have Indigenous people who are looking at agriculture as a career, it's really difficult to see us in the fabric. We don't see agricultural media or social media that really highlights the strength of Indigenous farmers. So for me, they're the fundamental things that need to shift and we really need to change that number way beyond 5.

Pip Courtney [00:31:30]:

Have you got any suggestions?

Josh Gilbert [00:31:33]:

I do. I think, certainly the scholarships are important and I'm really proud of the work that CSU is doing, Charles Sturt Uni, to provide their scholarships to young Indigenous people across Australia to think about agricultural careers. And they've seen a massive uptake. I think there's something like 20 young Indigenous people enrolled in this year's cohort. So, the scholarships are great to get them through the door, and we need to continue to nurture them through this journey so that they hopefully do take up some of these roles within agriculture more broadly. I think we also need to fundamentally shift the way in which we think about Indigenous agriculture as well. We need to actually recognise that it can be high paced, highly agile and it doesn't just belong in bush foods, that we have mob out there who are farming western agricultural commodities, beef, cattle, sheep, you know, and cropping.

And all of that kind of goes into this broader narrative of what Indigenous agriculture should look like. And we need to support people on this journey as well, that once they finish up at university, they don’t just graduate and go off and try and find a space in the Ag sector at large. We need to support them through graduate programs. We need to support them through leadership programs and other development. And fundamentally when we think about diversity in agriculture I guess, we need to not think about diversity of commodities. We actually need to think about diversity of people.

Pip Courtney [00:33:01]:

Do you think that future pipeline is there?

Josh Gilbert [00:33:05]:

I think it has to be there Pip. What excites me is that Indigenous youth is the only growing youth cohort in Australia. So, we have more a growing proportion of Indigenous young people out there who are ready to take on these roles. And actually the statistics around Indigenous unemployment actually, we have a, a higher unemployment rate in very remote areas and to have it disproportionately to non-Indigenous people. So, we have a whole opportunity of engaging a youth cohort, particularly in very remote areas to actually do some of this work. And then we also know we have quite a lot of mob living on the east coast and in the cities, so engaging in that broader agribusiness sector as well, I think there's a huge opportunities there.

Pip Courtney [00:33:56]:

We've got a question here from Slido. I'm someone who's paying respect to you and the Worimi elders. The question is how can we help landholders to connect with Traditional Owners in a respectful way to connect on Country and have an opportunity in agriculture?

Josh Gilbert [00:34:12]:

Yes. Thanks for the question and thanks for acknowledging Country here. I, for me, this conversation's important that we don't see Indigenous people as the people who are going to hold up agriculture or, you know, engage native title to take land back or, you know, the scare monger. I think that often happens. For me, these partnerships need to be deep and committed. We actually need to build the relationship. And the easiest way, I think, is to engage local Aboriginal people through either a Local Aboriginal Land Council or prescribed body corporate group to really sit down and have these conversations and to actually build genuine partnerships that I think for me, the ability to come together and learn together is the way in which we're going to keep this going forward. And obviously with that huge amount of land ownership, we actually really strongly need those partnerships for agriculture to thrive and continue thriving, but also to support Indigenous people on the ground. So yeah, I guess engage with Aboriginal people that, you know, engage with Local Aboriginal Land Councils or prescribed body corporates, but also do the work. Also look at what cultural awareness training and other trainings out there for you to engage in so that that partnership starts at a higher level than trying to get the basics right.

Pip Courtney [00:35:37]:

What learnings do you think that Indigenous people have to share with agriculture for better outcomes?

Josh Gilbert [00:35:43]:

I think there's so much Pip and I think we often overlook the history that's happened right across the country. So when we think about Indigenous involvement, we often don't think about the early point of contacts, where Indigenous people worked side by side non-Indigenous people to, you know, really build cattle stations into what they are now to be that source of labour. Uh, and the source of understanding of landscape and what that would look like within each the different locations where that was happening. We know that the Indigenous labour force was quite high in a lot of places, particularly up in the Northern Territory and still remains so. About 12% of the agricultural workforce up there identifies Indigenous. And for me, that presents and provides the opportunity for introducing Indigenous knowledges through western agriculture, like as what has always been done.

So we know some of the very early records talk about Indigenous people taking non-Indigenous people to sources of water, to the best grass, to know where to keep away from for cultural reasons and where that transition needs to happen because of climate change risk and other things that are happening in the environment. So where we can get the best of that knowledge and the learnings there and incorporate that into western agriculture. I think for me, there's this huge opportunity to really showcase what the future could look like and develop a truly unique Australian story that incorporates both perspectives there.

Pip Courtney [00:37:17]:

Josh, we've got a really good question on Slido. In the face of a constantly changing climate, do you see native foods as a sustainable solution?

Josh Gilbert [00:37:28]:

I think native foods definitely provide a good opportunity. There's 6,500 different native foods in Australia, and we've slowly commercialised about 15 now with a few more becoming popular and getting FSANZ’s approval. So for me, what they do provide is a really Australian-led solution. They provide diversification of income as well for those that want to pursue that path, but they also do provide the ability to bring out the best, I guess, of the two agricultural systems where you can grow Mitchell Grass and other grasses along with cattle production. For me, there's that joint story there that is really heart warming and really showcases what this new modern Australian light could be. And there's an example of a Dja Dja Wurrung who have just recently looked at yabbies and kangaroo grass and combining those entities together for agricultural production in Victoria. And for me there, there's so much demand for our native foods, not only here in Australia, but right around the world that we need to be utilising these opportunities and really supporting them to grow more and more into the future.

Pip Courtney [00:38:41]:

And what about fire management? What can we learn from Aboriginal people about fire management as climate change bites even harder?

Josh Gilbert [00:38:50]:

Yes, so much Pip. We know that our people have been managing this Country with fire for a long period of time. And for me, where we can respectfully engage with Indigenous people to understand how we can manage landscapes through that provides a really great perspective. I'd say that we need to be proactive around that and respectfully do it in a way that doesn't just say, teach me what you know, so I can then go and do it on my farm. There's a whole heap of risks I think associated with that, but where we can build really deep detailed partnerships where we can really respect the knowledge that Indigenous elders are providing through that, I think we can really think about the way in which we manage our landscape differently and really utilize some of this knowledge that I guess has been sitting dormant and hasn't been able to be able used for a long period of time. Often use the analogy that if we have a library and there's 65,000 years of knowledge, you would think that that's the first place you would look to, to how you manage your land. And we often don't do that. We just leave the books on the shelf and hope that what we've learned in the last 200 years is going to teach us that. So for me, it's around opening up that library, engaging respectfully through that, and then the good outcomes will come.

Pip Courtney [00:40:07]:

And another good question on Slido. How do Indigenous people support the commercialisation of native foods and are there any sort of IP issues there?

Josh Gilbert [00:40:23]:

Yeah, it really is a bit of a mixed bag I think. And I think I want to would start by acknowledging the diversity of Indigenous thought in this process. That we have some very strong Indigenous people out there who are commercialising these products and others who are hoping that they don't happen, uh, that the commercialisation doesn't happen or certainly doesn't happen as fast as what it does to protect and preserve these products for Indigenous use. So for me, the answers kind of both and that we need to work with Indigenous people on that and what their thoughts are, depending on what you're trying to commercialise and where I think there has also been a big push over the last 50 years by non-Indigenous people to commercialise a lot of the products that we're probably familiar with.

So, finger limes is a really great example of that, where the whole industry has basically been commercialised by a non-Indigenous person. And I think we also need to respect that pathway, and the lessons that they've brought into the sector to really keep that industry going and now thriving to how it is today. So, it really is dependent on the relationships you form where you're trying to do that and what you're trying to commercialize as to what that might look like. And there's certainly IP issues that need to be, you know, acknowledged and thought about through that process.

Pip Courtney [00:41:49]:

Josh, thank you so much for your time. We've got a few more questions here, but I'm sorry we've run out of time to get them to you. So thanks again and we are going to move on for another session.

[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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