# Science to Practice Forum 2023

Day 3 Session 3 transcript

(Duration 25 mins 5 secs)

8 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 3 of the Forum, session 3, Overcoming barriers to change.

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 [00:11]:

Next up, a guaranteed conversation starter with an academic’s insight into why farmers are or aren’t adapting their practices. Dr. Hanabeth Luke is a Senior Lecturer in science and regenerative agriculture at Southern Cross University in Northern New South Wales. She’s the project leader of 2 Soil Cooperative Research Centre projects. The Social Benchmarking Project surveyed 3,000 farmers across 5 states. Can’t wait for your presentation, Hanabeth.

Hanabeth Luke [00:41]:

Thanks so much Pip, and lovely to be here today. Thanks and good afternoon everybody. I come from a training in science, and what always interested me was how end users are using those new incredible science technologies, innovations and knowledges. I think that’s a really important part of how we build resilience as well, and how we can better understand how farm practices can make a difference for the future. So I’d like to acknowledge the Traditional Custodians of the lands on which we’re meeting and today, and the elders past, present and emerging. I’d like to talk with you today about a survey project that I’ve been running. We’ve sent it out to about 12,000 farmers so far in Australia and had about just under 3,000 back, and it’s part of a Soil CRC project, which is looking at understanding well, what are the drivers of decision making for farmers?

And we know that farming is complex. There are social factors, environmental, economic factors driving decision making on farms. And so it’s really important to understand the priorities and challenges that farmers face. So this survey is developed through an established methodology, which is built on, sort of sociological understandings. We use these surveys to get input into strategic planning and decision making for various regions. The six regions are across Western Australia, South Australia, and New South Wales and Tasmania, and we’ve got about 40 participants, about 20 farmer groups as a part of this. And what’s really important about this process is it’s developed through a process of co-design with local partners so that we have regional priorities and also core questions. So we’ve got regionally relevant and nationally significant data coming from this survey. So to give a bit of an overview of results, and we have a lot of them.

So in a nutshell, we have a lot of demographics. We get to understand what’s happening, who are the, or what’s the demographic makeup of farmers across those regions, property size, how they’re managing their farms, what practices they’re implementing on those farms. What is their, what’s driving those practices, everything between their attitudes and their values as well. So what we find across regions is some things are the same and many things are different. For example, the ability and wanting to have the ability to pass on a healthier environment for future generations is a core and most important value across all regions. But there are things that get in the way and for example, financial limitations, which are fairly consistent across regions, between 44 and 51% of farmers are experiencing financial limitations to change. Also, you have time, this can be a real constraint, strangely enough that Eyre Peninsula farmers, get a little bit of time off in summer, but it’s a bit of a lesser restriction for them.

But also you have the least risk averse farmers in Western Australia. That’s what popped up. But also, 31 to 41% of farmers see themselves as early adopters trying new things. And younger farmers can tend to feel less supported, but often have higher self-reported knowledge levels as well. So we also look at the farming challenges and the challenges that farmers face, and we ask some open questions and some closed questions about that. And we found that about half of farmers are wanting to see fundamental changes in their region to ensure that they’re more resilient and sustainable into the future. And these figures here show actually, the proportion of farmers who believe in climate change, are actually finding that is something that is quite important as a driver of resilience building change in different farming regions.

And when we ask an open question about challenges for farmers, climate change and succession planning come up as the top two. But there are other regional issues that are important, and water security comes up as a top four issue across all regions. Also rising input costs, absence of regional services and also social license on farm. Uncertain returns is a big issue for a lot of farmers. This links in with soil erosion, low biological activity or low organic carbon on farms and declining nutrient status of soils as well come up as important issues across regions.

And so what are the drivers of farmer decision making? We have various values, beliefs and attitudes, trust in regional organisations. All of these things are really important, but the factors driving practice change, which are also levers for change, are trusted organisations delivering, via a variety of platforms, which builds knowledge and confidence around best practice implementation. In addition, confidence with data management is important for whole farm planning and implementation of various practices like soil testing. But having a whole farm plan in place is, itself, very important for the implementation of a whole range of best practices. Trusted sources also may include Cyril and Jolene, the farmers next door. So they’re also important for perceptions of risk and investment confidence, and also whether climate change is believed to be caused by humans. And this is indeed a major motivating factor for the implementation of farmers implementing practices to reduce emissions, build carbon, and or build resilience in other ways.

But what is also coming to the surface is really important for farmers and resilience, and wellbeing, is whether the farmer is alone on the farm or part of a bigger decision-making team with a family or others. Having family on the farm leads to longer timeframes of decision making, improved succession planning and improve likelihood of whole farm planning as well. So lots of good outcomes you can never discredit just time and money and the weather as well. These things all come together. There’s no silver bullet in in terms of, you know, the levers for change, but certainly there’s a lot of things that we can understand a lot better for our farmers, and these surveys are certainly have been a really good way of doing that. Matthew Alexanderson is my PhD student and research assistant and he undertook a practice-based analysis of farmers implementing a range of best practices, finding that these farmers had higher environmental values, are more open to risk, higher self-reported knowledge, and also more collaborative in their decision making.

Less like likely to be using conventional information sources like podcasts and books, more likely to have succession plans in place and more, in perhaps investment, reinvestment in property, and obviously more likely to be changing their property operations as a result of considering opportunities to reduce carbon emissions. So, also they’re found to have more time and money, whether that’s cause or effect, it’s difficult to say. So to summarise, the key elements that are driving this farmer decision making are the characteristics, their demographics, their underlying values and priorities, their attitudes to change, who they’re connected with, also whether they’ve got the time and money and the networks they’re a part of. But in relation specifically to resilience building practices, the capacity and actions to undertake whole farm planning, that data capacity, also belief in climate change is coming out as a major motivator for resilience building practices, to ensure that better capacity to respond to drought, fire, and flood. Also, the decision-making team is coming out as really important and that links in with decision making, it links in with whole farm planning and knowledge. So, you know, in short, we have, you know, what we are able to do with these surveys is better understand what motivates farmers and finding ways that we can better connect with them and better support them with strategic planning for these regional NRM groups and farming system groups across Australia.

Pip Courtney [09:19]:

Dr. Hanabeth Luke, thank you for that fascinating report about how you work out who’s going to change. We have a question here from Slido. 3,000 responses is a great number of responses from farmers and some interesting figures. Are you finding more and more that farmers are seeking this evidence-based data in making their business decisions?

Hanabeth Luke [09:41]:

I think it’s a really in interesting question. I think it’s different for different farmers. And I guess when you’re saying are they seeking it more and more, at the moment it’s not longitudinal. So we’ve got a snapshot. A survey is only ever as good as the snapshot. In some regions, such as in North Central Victoria and the Wimmera, there were surveys five years ago and more. And we are finding the way that people are using information is certainly changing and we are finding that people are moving away from a potentially extension agents, they are using, no surprise, the web more, but also moving more into those online networks. Early adopters certainly are wanting to see more data driven, but there’s many different types of farmers out there across the different regions.

Pip Courtney [10:29]:

You talked about data. Is there a risk that some farmers will get overwhelmed by the data? Never have they had so many devices, whether it’s hanging off an animal’s ear or a waste station, to collect data. Are you worried that all this, that all the value, because they won’t be able to mine it, because they might get overwhelmed? And is that time to delegate and give it to a farm advisor?

Hanabeth Luke [10:51]:

Yeah, I think that’s why the West Midlands group that we work with actually raised data management as an issue they wanted to explore in the survey, because it is, it’s a real barrier. If people don’t have a good understanding of data, how are they going to use all these new wizz bang tech technologies and widgets? And we’re monitoring their soils. And also they’re less likely to be able to prepare nutrient budgets. They’re less likely to use other technology. So it is a real factor. And as we move into a time of increased technology and as these technological advancements continue, that training is really, really important. Like short courses are one element for training farmers also other agricultural courses. Building that knowledge as we build the technology is gonna be really important for farmers in into the future. But also, yeah, building that confidence and capacity as well, but also, understanding as well, when we asked farmers if they wanted to have a particular innovation or tool or widget to help them make farming decisions, you know, they actually said they just wanted better internet. So we’ve gotta get, we’ve gotta support the whole system.

Pip Courtney [12:02]:

Yes, let’s walk before we run. Thank you, Dr. Hanabeth Luke from Southern Cross University. Now we’re crossing to Rockhampton to hear from Sam Moore from Evidn and Daniel Rea from the Fitzroy Basin Association. They’re speaking about their FDF funded drought resilience and innovation project using behavioural science to better understand and improve drought resilience. Sam is a Senior Behavioural Scientist at Evidn, a company specialising in behaviour change programs, and Dan is the Drought Resilience Coordinator for the Fitzroy node of the TNQ Drought Hub. He’s also the Partnerships Coordinator at Fitzroy Basin Association and the Fitzroy Basin’s Climate Mate. He advises organisations and landholders on how to prepare for drought. Sam and Daniel, over to you.

Dan Rea [12:55]:

Oh, thank you very much Pip. It’s an honour to join everybody at the forum and it’s been a great couple of days for sure. So as the introduction said, my name is Dan Rea and I work at Fitzroy Basin Association, we’re the profit-for-purpose non-government NRM group that looks after Central Queensland. So we work with communities right across the Fitzroy region to improve sustainability and we have an amazing region that we get to call home and try to help look after. Some people may not know, but the Fitzroy is the largest catchment on the East Coast about twice the size of Tasmania. So getting around the place is sometimes a bit of a challenge. Obviously Rockhampton is known as the beef capital, and we have over 2 and a half million heads. In fact, I think at the moment, we’re over 3 million head, which is the largest herd in Australia.

Also a very productive mining area and some amazing native places. We also straddle the Tropic of Capricorn, which makes it a very varied climate, another challenge for our amazing land managers to produce high quality beef and crops, and face the vagaries of the weather. For this project, at the time, 3 or 4 years ago, 90% of our basin was drought-declared. I can pleasantly say that at the moment that’s not the case. It’s much reduced, but we also know that the next challenge is not too far away. So in this project, we decided to focus in on 3 of our local government areas that being, Central Highlands, the Banana Shire and Rockhampton Regional Council. And you can see on the map there, we decided to focus in on 5 communities. So Emerald and Rolleston out in the Central Highlands, Stanwell just west of Rockhampton and Biloela and Taroom in the Banana Shire.

Part of the reason behind selecting these, it was a variety in size of town, but all of them serve as a meeting point and a central place in their community. And part of what we wanted to address in this project was how do we bring the communities together, especially in those difficult times, such as in drought. I’ll have to acknowledge the funding from the Australian Government’s Future Drought Fund, and this was from the Innovation Grant. And it’s one of our core values here at FBA is to always look at doing things innovatively. And it’s why we decided to partner with Evidn and look at the behavioural science behind drought resilience.

Part of the project scope was about increasing levels of engagement. That is, how do we go beyond the people that we always work with to include all of the community in our existing projects and services? And probably one of the questions that many NRM and extension and advice organisations try to address, which is how do we engage to that broader demographic that may not be aware of our services or support that we can offer. The third string to the scope was really about building the capacity of all of our staff, so that when they’re out sitting around kitchen tables, delivering workshops in the community or just attending community events on the weekend, they’re able to support, engage people and put them in the right direction, I guess, of the drought projects and services that are on offer. So this is the challenge that was before us. And we were really excited to partner with Evidn, to try and tackle this challenge. And so I might hand over to my colleague Sam to explain a little more.

Sam Moore [16:53]:

Thank you very much Dan. I think that’s a great overview there. And really just drawing on what Dan’s saying and coming into our role at Evidn as Behavioural Scientists, the approach we often take, you know, when you really think about it, a lot of challenges out there in agriculture relate to people, at least in part and have human behaviour, our attitudes, behaviours, and beliefs at core. And some of these challenges, you know, it might only be a small component that relates to people. For others it might be a pretty large component as well. And our approach is thinking, well, you know, if we can just better understand what that is and how that looks, it’s a really important approach that we can help to refine some of the strategies and challenges we are looking at and work hand in hand with existing approaches in extension, agronomy, etcetera, as well.

And that’s a little bit about what we do at Evidn, which is really better understanding the opportunities and challenges that we face as agricultural communities and then designing solutions at scale that better suit the opportunities, needs and challenges and local priorities of some of these communities as well. Dan kind of touched on this before, but there’s kind of 3 main pillars of our project that we are looking at. Part one is complete, which is our behavioural analysis, is what we call it. Essentially looking at the drivers and barriers to engaging in some drought programs and services across the Fitzroy Basin. Part 2 is looking at designing, testing and evaluating some change strategies that can help to increase engagement in some of these programs. And then finally embedding those in the community to make sure that when this project wraps up and our team and funding ends, that can continue long beyond our involvement as well.

So we’re about halfway through at the moment. What I thought we’d do is just quickly rewind and go through our analysis in a little bit more detail. Firstly, how we go about doing that, and then what we found as well and where to from here. So one of the main approaches we are guided by as behavioural scientists is a actually fairly dated model now, but it says, look, you are a person here or a community, you are working towards a particular goal in this case being more resilient, your behaviour at any one times a balance of driving forces, anything that motivates you to engage in this particular behaviour. And also barriers, the restraining forces, the things that get in the way. And of course this exists not only at this person’s level, but across the broader system, the social, organisational and cultural context, and why this is such an important and powerful theory.

It’s a bit counterintuitive in some ways, it says, look, rather than just selling the benefits, that’s important, but if we are really serious about change at scale, we also really need to systematically understand and remove the barriers to change. Because if we don’t, they’re gonna be acting as a brick wall, which is kind of what’s depicted there as well. So we’ll do a lot of background research and literature review, but also a main approach of ours is going out and engaging with landholders and community members to better understand what this looks like and what solutions might be beneficial to them. A question we often get at this point though, is well, okay, what does this look like? You’ve got all of these drivers and barriers, how do you go about actually assembling this into a program that’s gonna benefit people?

There’s a number of things we can do here, but a very quick snapshot is looking at, well, how impactful and versus how feasible are these things across the community as well? If you can dream the dream and essentially remove all of these barriers, what impact is that likely to have on the target behaviours in this case, drought resilience, versus how feasible is that to actually do, as well? Noting our scope and various other things going on there. And of course, as behavioural scientists, that top right quadrant there where we’ve got a very highly impactful and also feasible solution is where we focus in on. So very quickly, going through the main finding from our analysis. For some people here it might be fairly obvious, for others it might be fairly new as well. But the biggest thing we are finding, at least in the context of engaging in drought programs, is this idea of isolation, or really how connected you are to your community or not connected you are is a really big predictor of how willing you are to engage in programs, whether they’re drought resilience or other things, as well.

And we mean isolation in every sense of the term. People not connecting to their community socially, people feeling withdrawn or apathetic. People experiencing maybe physical and mental health concerns. We know social connectedness is such an important factor for our overall health and wellbeing, not connecting to services or maybe services not quite connecting as they should be to one another as well. And then how that’s messaged and communicated, potentially being a bit complex at time to time as well. This has been our biggest finding and it is a really significant one. And in terms of where to from here, our main focus is thinking about how can we better connect the amazing program services and people that are already out there in the Fitzroy Basin, around a regional identity? If we can better collaborate and connect, that’s going to lead to a number of really important outcomes.

If we can better communicate our services and have a streamlined approach to doing so, it’s going to lead to a number of psychological and behavioural outcomes, improved service delivery, improved ease of access to these services, improved knowledge and awareness of what’s out there in terms of support and information, and of course engagement in these programs as well. And of course, what we predict is that that in turn will lead to improved land management, including of course, practices and programs that will improve our drought resilience and more broadly as well. So that’s really where we’re focusing on. If we can better collaborate and connect as service providers, it’s going to really improve the way communities come together and rally around their drought resilience. That’s a very quick snapshot from me. I’d also acknowledge the amazing funding from the FDF and the pleasure to work with FBA. I’m not sure, Dan, if you had any final comments as well on your end?

Dan Rea [22:46]:

Oh, that’s a really good summary, Sam, and we’re obviously very much looking forward to the next phase, perhaps reporting back at next year’s Science to Practice Forum of how the rollout goes from here.

Pip Courtney [23:01]:

Thank you both Sam and Dan. We do have a question here from you that’s coming in on the Slido app. You mentioned working with the harder to reach landholders. How do you go about identifying and engaging with them?

Sam Moore [23:14]:

Thank you, that’s a great question. Sorry Dan, off to you.

Dan Rea [23:21]:

I was just going to say that certainly in the beginning of this project, actually having a different provider, so, having Sam and the team at Evidn be the ones going out conducting interviews. A lot of the time we made some introductions to some of the landholders or groups in our region, but then from there, there was further introductions that got them into people that may have not really known, or not normally connected with us.

Sam Moore [23:51]:

Excellent. And I’d only answer that as well,

Pip Courtney [23:54]:

Well, that farmers go, oh yeah, okay.

Sam Moore [23:58]:

Apologies. I was just going to add to that and mention it’s a bit of a snowball sampling technique on our end where yes, it’s the initial people that are very visible in the community and potentially easy to reach, but we’ll directly ask, you know, is there anyone that might have a different, or very different opinion to what you have and would you recommend us speaking to them and getting this generation of contacts as well? It does take time and it is very potentially resource intensive, but the insights you can get are very worthwhile.

Pip Courtney [24:30]:

Sam and Dan, thank you so much for your time. It’s great to have this conversation about yes, behavioural change. It’s a first for me, anything to do with it at a farmers’ conference. Thank you so much.

Dan Rea [24:42]:

Thank you.

Pip Courtney [24:45]:

It’s now time for a 15-minute break before our final afternoon session of the Science to Practice Forum. When we return at 2.30, we’ll head to Tamworth to hear how a mental health worker is writing a new chapter with the My Drought Story initiative and find out how some Vocal Locals found their voice. Back soon.

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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