



Australian Government
 Department of Agriculture,
 Water and the Environment



Future
 Drought
 Fund

VICTORIA DROUGHT RESILIENCE ADOPTION AND INNOVATION HUB

North-East node -
 Regional consultations
 Summary Report 1
 February 2022

*This project received
 funding from the Australian
 Government's Future
 Drought Fund.*



1 Introduction

This report provides the results from an analysis of the consultations conducted by the Victoria Drought resilience innovation and adoption hub (the Vic Hub)¹ between September and December 2021 to understand farmers' and other stakeholders' experiences of drought and their insights for enhancing drought resilience.

The aim of the consultations and the subsequent co-design process with stakeholders is:

1. To identify significant issues and implement actions for drought resilience innovation through co-designed projects with different communities across Victoria (and Australia).
2. To provide a foundation and legacy for ongoing collaboration between the drought HUB partners and key stakeholders to enhance drought resilience with communities.

This report is the first in the series of reports that capture farmer and stakeholder perspectives to guide the ongoing activities of the Hub.

Information on how the consultations were conducted, the questions asked, and the way data was captured and analysed are provided in Appendix 2.

Individual node reports are available from the node leaders, with their details at the end of this report.

1.1 Node locations



¹ The Future Drought Fund (FDF) is a \$5 billion investment fund established by the Federal government intended to provide a secure, separate continuous funding pool for drought resilience initiatives. It will help Australian farms and communities prepare for the impacts of drought. A centrepiece of the Drought Resilience Research and Adoption Program is the Adoption and Innovation Hubs. Hubs are made up of consortia of research providers and research users, with a regional focus. **The Victorian Hub**, led from the University of Melbourne's Dookie campus, is one of the eight regional drought resilience hubs across Australia. The partners in the Victoria Hub are regional node leaders: Birchip Cropping Group, Food & Fibre Gippsland, Southern Farming Systems, Riverine Plains and the Mallee Regional Innovation Centre and Deakin University, Federation University, La Trobe University and Agriculture Victoria.

1.2 The drought cycle

The Drought Hub describe four stages in a typical long term climate cycle.

To build resilience you need to be prepared and then act in a timely manner in each of the four stages.

The good period, with consecutive average or above average growing conditions. We will still get these even with climate change. Decisions made here can have a big impact on how we cope with the other 3 stages of the cycle. We need to act in this period to invest in drought resilience

The uncertain period, with growing conditions well below average (decile 3 or below) and the next expected positive event e.g., wet spring, autumn break, next wet season fails to materialise. People are 'hanging on' for a positive event to relieve a bit of anxiety, hoping things will come good. Possibly hanging on for too long where some different actions may help, if the drought period kicks-in.

Drought period where several expected positive events (average or above) don't occur. The uncertain period merges into a drought, with little or no rainfall. Decisions are really about what to spend money on, what to sell and when to cut your losses. The main aims are to extract the maximum value out of what is left and the resources available for recovery (finance, pastures, soil etc) are in the best possible condition later on.

This may mean not sowing at all, only hanging on to core breeding stock, confinement feeding, refinancing debt payments etc. This stage also has potential animal welfare and biosecurity issues.

Decisions about what is essential and what is not is difficult, and often more so with other emotional stressors. Personal wellbeing and the need for various support structures, social events, counselling, fodder subsidies, short term loans/ interest subsidies etc become critical especially in prolonged drought with no clear end in sight.

Recovery where there are 'green shoots' to signal things are on the way to a good period. People feel more optimistic, but money may be tight and recovery slow or significant changes needing to be made. Small, short term wins are needed and doing something different in the short term while progressing to the preferred long-term position. Identifying opportunities, which may not be common, don't always spring to mind when feeling the relief of a change in fortune and having extra support to consider what would work can be helpful.

The consultations drew on the four stages in the drought cycle to explore the experiences in each stage, the support needed in each stage and the gaps in knowledge, products and services and opportunities for innovation in these areas in each stage.

2 Consultations

Ten consultations took place between October and December 2021. A total of 23 individuals were consulted, including, farmers, advisors, agricultural suppliers, advocacy groups, government, statutory authorities.

<i>Stakeholder group</i>	<i>No. interviewed</i>	<i>Notes</i>
Advocacy body or community group	3	Mid-age (36-55), Predominantly Female
Farm services provider	2	Mid-age (36-55), Predominantly Male
Farmer	2	Mid-age (36-55), Predominantly Male
Farm services provider	2	Mid-age (36-55), Predominantly Male
Advocacy body or community group	3	Mid-age (36-55), Predominantly Female
Farmer	2	Mid-age (36-55), Predominantly Female
Government or other statutory authority	2	Young (18-35), Predominantly Female
Farm services provider	2	Mid-age (36-55), Predominantly Female
Farm services provider	2	Mid-age (36-55), Predominantly Male
Farmer	2	Mid-age (36-55), Predominantly Female

3 Summary of themes

The following themes are derived from data collected through the consultation process. Major themes are identified. Themes are derived from the underlying meaning of cited ideas, considering context and expression. The themes are in no specific order.

3.1 *Multiple stages in drought cycle*

3.1.1 Access to resources and inputs

Barriers to accessing resources and inputs was noted during ‘in drought’, ‘recovery after drought’, ‘leading into drought’ stages of the drought cycle. For farmers, this is specifically related to finance, labour, and machinery. For advisors and advocacy bodies/community groups this relates to funding support programs and events.

3.1.2 Advisory services

The value, constraints and opportunities of advisory services are noted during all stages of the drought cycle. The importance of targeted, and current advice, and interpersonal skills is noted. Opportunities for improved advisory services include capacity building in communication, collaboration between different advisors, and mental health support. The lack of capacity building opportunities is noted. Managing how farmers reconcile conflicting advice is recognised as a challenge. Holistic approach to advisory services, i.e., considering and integrating advice (e.g., agronomic and financial) is suggested. The role of advisors in providing (mental health) support to

farmers and families is recognised, and the importance of managing personal (advisor) mental health.

3.1.3 Business management

The important role of business management is noted during all stages of the drought cycle. The value of market knowledge (including alternative markets), external (off-farm) income sources, financial mechanisms (e.g., tax concessions and farm management deposits), strategic capital and asset investment, communication with suppliers and consumers. The benefit of capacity development in these areas is noted. The value of business management knowledge and experience for advisors (like agronomists) is noted.

3.1.4 Decision making

The value of and challenges to strategic decision making is noted during 'in drought', 'recovery after drought', 'leading into drought' stages of the drought cycle. The difference between strategic (long-term) and responsive (short term, *ad hoc*) decision making is noted. Reluctance to make big, season-defining decisions (i.e., cutting hay) is noted as a barrier to resilience and productivity, this is often associated with lack of machinery.

3.1.5 Environment and climate change

The value of and challenges relating to the environmental and climate change is noted during all stages of the drought cycle. Managing compounding natural events (frost, fire) is recognised as a challenge.

3.1.6 Farm management

The importance of farm management is noted during all stages of the drought cycle. A focus on maintenance and conservation of the farming business and associated resources/assets (soil, perennial crops, and livestock herds) is noted during the 'recovery after drought' stage. The benefits of agronomic strategies (e.g., water use efficiency, soil health, plant nutrition) are noted when preparing for, surviving and recovering from drought. Additional strategies include, increasing diversity of the farming system (beyond cropping) to include livestock, lower impact farming systems (regenerative agriculture, carbon farming, native flora and fauna). Improved management of machinery assets and engaging contractors is suggested. Making 'season defining' decisions, like cutting hay, is noted as a challenge. Associated issues include, accessing necessary information and machinery and the increased workload involved in cutting hay.

3.1.7 Farmer experience

The value of farmer experience is noted during all stages of the drought cycle. Having experienced drought is recognised as beneficial to dealing with drought, both in terms of decision making and mental health, is noted. Conversely, the challenges faced by new and young farmer inexperience is recognised.

3.1.8 Financial support

Issues related to providing (public) financial support to farmers is noted during 'in drought', 'leading into drought', and non-drought' stages of the drought cycle. Namely, knowledge of the support available, timing of support, and the application/evaluation process. Issues around eligibility and equity of support programs is recognised, e.g., a lack of support for young/new farmers and farmers with external income sources. Drought relief, similar to Victorian Farmers Federation (VFF) bushfire relief is suggested.

3.1.9 Government policy and regulations

The role of government during 'recovery after drought' and 'leading into drought' stages is noted. A greater focus on government policy, beyond the 'in drought' period, to the recovery and preparation stages is suggested. Developing more targeted drought and disaster policy is suggested. Additionally, a lack of engagement with indigenous groups is noted.

3.1.10 Indigenous knowledge and culture

Improving engagement with and opportunities for promoting indigenous knowledge and culture is noted during 'in drought', 'leading into drought' and 'non-drought' stages is noted. This includes increasing knowledge (among farmers and the community) of indigenous cultural knowledge, promoting tourism of indigenous sites. Loss of indigenous knowledge associated with private property exclusion is noted.

3.1.11 Information provision and access

The value, constraints and opportunities of information provision and access is noted during all stages of the drought cycle. The value of accurate and accessible, regionally specific weather and climate information is noted. Opportunities to improve accuracy and access to this information is suggested. Farmer time constraints are recognised as a barrier to seeking out and accessing information. Collation of information sources for farmers is suggested. The value of research and development in managing drought is noted. The benefit of for versatility in research to respond to issues (e.g., extending research on drought) is noted. Developing groups (communities of practice and interest) to share knowledge around specific issues is suggested, including water regulations and trading and drought resilience. The importance of localised information, and associated disparity of information between different regions/localities is noted. A lack of awareness around information sources is noted. The importance of timely information provision is noted, farming events (field days, workshops) are recognised as effective avenues for this information. The important role of farming systems groups in providing localised research and extension.

3.1.12 Innovation and change

Drought as a driver for capacity development, innovation and practice change is noted during all stages of the drought cycle.

3.1.13 Mental health

The impact of mental health is frequently noted during all stages of the drought cycle. The value of; peer, family and community support, farming events, public green spaces, and health natural environment; to mental health is noted. Concern for mental health of farmers, advisors and the wider community and the importance of support services for these groups is notes. Improved knowledge of and access to support services is suggested.

3.1.14 Perception of drought

Differing perceptions of drought are noted during 'in drought' and 'leading into drought' stages of the drought cycle is noted, namely between farmers and government. Acceptance of drought, by communities, as being part of the natural cycle is noted.

3.1.15 Risk management

The benefits of effective risk management during all stages of the drought cycle is noted. Specifically in relation to farming system diversification and financial management. Noted risk management strategies include system diversification, infrastructure investment (irrigation and storage) and financial management. The different approach to risk management between stages of the drought

cycle is noted, e.g., being less risk averse during the recovery stage associated with 'getting things going again'.

3.1.16 Severity and impact of drought

The severity and impact of drought is noted during 'in drought', 'recovery after drought', 'leading into drought' stages of the drought cycle. Uncertainty around the severity of drought and its impact on decision making is noted.

3.2 *Stage in drought cycle: In drought*

3.2.1 Water management

Issues around water management is noted, namely the impact of unbundling (water and land), water movement on environment, strategic land acquisition, and (water) market volatility.

4 Suggested focus for drought hub

There was broad endorsement of the value of considering drought during non-drought periods.

There was some concern expressed in the title of Hubs being focused on drought resilience rather than general resilience.

Some participants considered the Hubs as a response to the scaling back of public services. The need for all organisations (gov/non-gov) to provide support during drought was raised.

The Hub was considered to play an important role in Improving integration of activities of organisations and agencies. For instance, this report from the consultations would be an important resource including for example to be provided to other groups like the Australian Rural Leadership Program.

The Hub is considered as an important avenue for providing opportunities for people to connect and to improve awareness of information, programs, and support available.

Other areas of activity suggested included:

4.1 *Capacity Building*

- Capacity development in: business management, drought preparation, mental health support,
- Importance of community
- Importance of capacity development, safety and community
- Capacity building in business management for young farmers

4.2 *Events*

- Facilitating targeted and timely farming events, including off-farm events during drought – benefit of socialisation
- Integrate peer-to-peer knowledge sharing
- Improve funding access for farming events

4.3 *Communications*

- Reframing projects, opportunity for change rather than drought management
- Promote resilience through innovation and change

4.4 *Leadership development*

- Role of community, farmer leaders in adopting change

- Value of supporting ‘leading farmers’ in that (informal) role

4.5 *Social research*

- Challenge reaching disengaged farmers
- Understanding psychology of farmers

4.6 *Support access to resources in drought:*

- Understanding the conditions that create scarcity

4.7 *Types of information needed*

- Improve awareness of and access to sources of information and support, decision making reliant on timely access to information
- Promoting technology in communication and farm management
- Promote solutions that address, farming and (mental) health
- Improving long-term climate forecasting
- Creating awareness of alternative farming methods
- Promote local and regional (farming and community) organisations, disparity between regions exists

4.8 *Reap benefits from collaboration*

- Promote collaboration between Landcare and farming system groups, as pathway for R&D
- Develop networks of shared resources, e.g., monitoring equipment
- Integrate data from monitoring equipment between organisations
- Promote farmer-driven research and on-farm research trials
- Focus on innovative farming practices
- Improve understanding of drought within government and broader society
- Build trust between farmers, government and broader society

4.9 *Indigenous engagement*

- Increase engagement with indigenous people
- Promote cultural knowledge
- Include indigenous knowledge in drought hub activities

5 **Responding to findings from the consultations**

Following the consultations, several projects have been initiated and further planning underway to address short, medium- and longer-term opportunities to improve drought resilience.

6 **Contact information**

Hub HQ: Co-directors:

Tim Reeves:

Ruth Nettle:

Node contacts

North East Node: Riverine Plains Inc: Dr Sara Hely:

Appendix 1: Summary of consultations

6.1 Summary of consultation: Advocacy body or community group, Mid-age (36-55), Predominantly Female Node: Riverine Plains

Stage in drought cycle: In drought	
Objective: What impacts were there for your membership?	
It had a big impact on farmers in our region, on the farming systems they operate in. In the 2018/19 drought our areas of Benalla & Strathbogie were declared drought-impacted. The main impacts were lack of water on farms, and feed availability (hay storages, silage). In our area we have a mixture of big operator farms (5000 acres), to small landholders (100 acres) doing intensive farming. The common issue across all those producers was the lack of water on farm, and availability of fodder to support their livestock.	<ul style="list-style-type: none"> - Lack of inputs, water, feed
Objective: How did people receive support from your organisation?	
Our work tries to bring community together to keep people linked in with each other. We also focus on mental health. During the drought we put on events that were very focused on bringing people together, off the farm, for a series of information workshops that could assist them in making better decisions. Guest speakers included MLA, agronomists, etc. The workshops also looked at adaptation to climate change, what farmers can do to prepare, e.g. new technology and data sources.	<ul style="list-style-type: none"> - Building community - Support services, mental health - Information provision and access, off-farm workshops - Information provision and access, introducing technology
Objective: Were staff in your organisation prepared for coping and responding in drought?	
Our Landcare group is unique, we work with mostly dryland farmers (mixture of cropping & red meat producers), & have always focused on solving on-farm issues. We work very closely with Ag Vic. But no one came to us with a big bucket of money to run events to assist farmers. We had to source all the funding ourselves to run those events, so we're very independent. We brought in skilled people to deliver the information. So we were prepared, because our skillset was that we knew our areas, knew our farmers. That's the value of being on-ground. The challenge was finding the funding.	<ul style="list-style-type: none"> - Challenge accessing funding for events
Reflective: What would you repeat when the next drought occurs?	
Would repeat the wild dog fencing program we ran for sheep producers. It was great because we want our producers to be productive, and also be able to sleep at night. The fences also exclude deer & kangaroos. During a drought, those pest animal pressures can be tipping points for some farmers. We'd also look at re-running the chemical control course for	<ul style="list-style-type: none"> - Solutions that address, farming and (mental) health

<p>farmers. Also information days on cattle/sheep yard design, on-farm safety, and mental health. These events all bring the farmers off the farm, and they socialise and see what their peers are doing. Really important during a drought to keep farmers linked in and not isolated.</p> <p>Huge demand for these events, e.g. at a stock handling day we'd get about 80-90 people attending, because it's relevant and helpful for them. Our key aims are to upskill farmers, keep them safe, and keep them linked in to their community.</p>	<ul style="list-style-type: none"> - Importance of hosting off-farm events, socialisation - Importance of community - High demand for farming events - Importance of capacity development, safety and community
<p>Interpretive: What gaps in responses or support need to be addressed?</p>	
<p>The gap is: who do the farmers go to? Who is the key body they should go to to find information during a drought. Government departments are always behind the eight ball. There's no one, central place for farmers to get their information from. How do we as a Landcare group share our information and methods with other shires or catchments? Farmers need better access to information in order to act more quickly. Need a key resource and human contact. Our Landcare group works on-ground and tells Ag Vic what kind of training/resources our farmers need, but not everywhere in Victoria has access to such a good relationship with a government agency. Ag Vic, VFF etc. have been scaled back and lost their contacts and relevance to farmers.</p> <p>Had a bushfire go through, but wasn't big enough for VFF to get involved in delivering hay, so our group took on the role of delivering hay drives to the farmers. VFF doesn't step up unless a significant number of their members are affected. Gap: who steps up to respond to drought? Need even coverage throughout our communities.</p>	<ul style="list-style-type: none"> - Information provision and access, lack of clarity around information sources - Information provision and access, disparity between regions - Decision making reliant on timely access to information - Scaling back of public services - Need organisation (gov/non-gov) to provide support during drought, like VFF in response to bushfires
<p>Decisional: What new ideas or innovation would help for this phase in the future?</p>	
<p>Need a central body that is relevant and accessible. E.g. Dookie Ag College doesn't engage with the farmers, so no farmer would go to them for information anymore. The advantage of Landcare groups and farming systems groups is that they can engage with the community. The teamwork between those groups gives us relevancy and responsiveness. E.g., during the drought we knew we needed to look at feed budgets and water calculations, so we rang in Ag Vic and other relevant consultants to deliver the right information to the farmers.</p>	<ul style="list-style-type: none"> - Information provision and access, importance of local/regional organisations - Information provision and

<p>Everyone needs to sit at the table and be accessible. Need to make it obvious who the go-to organisations/people are, and they have to have trust and credibility. Farmers will only engage with groups who have the right information and know what they're doing. Bring Landcare to the table, who bring in huge amount of contacts and engagement. Need a one-stop-shop, a repository of great information.</p>	<p>access, Landcare/farmin g system groups providing pathway for R&D</p> <ul style="list-style-type: none"> - Information provision and access, importance of clarity around information source/s
<p>Stage in drought cycle: Recovery after drought</p>	
<p>Objective: Who did your members turn to during this phase?</p>	
<p>The farmers knew another drought would happen again, so they turned to us. Wanted to know how they could be better prepared for next time. We looked at how to be prepared in terms of storing silage, water supply. We tried to upskill their knowledge, how they could be more productive, and make better decisions. We applied for grants for upskilling, e.g. moisture probe work, how to use weather stations, tank monitors, precision mapping. Farmers wanted to get those tools in place, to have more control during drought times.</p>	<ul style="list-style-type: none"> - Information provision and access, seeking information around preparing for drought - Preparing for drought, farm management - Preparing for drought, monitoring equipment/tech nology
<p>Reflective: What unexpected issues were encountered in the recovery phase e.g. membership decline or growth, mental of physical health, policy barriers, population decline</p>	
<p>Farmers wanting to know how can they keep improving their farms, e.g. getting vegetation back onto their properties. Also an emerging issue is talking about carbon on farms and carbon trading. Also we work with farmers who supply to Coles and Woolworths and need to supply carbon-neutral products. So farmers are looking for how to engage with the carbon discussion.</p>	<ul style="list-style-type: none"> - Conservation of land/soil - Interest in carbon farming - Market demand for carbon-neutral products
<p>Interpretive: Are these things in place now?</p>	
<p>In terms of support for farmers to embrace new technology, carbon and sustainability, it's coming. We've applied for a whole lot of funding, e.g. Smart Farming grant. So the farmers are ready to go, it's just about us finding the funding. And how do we make sure it's accessible for everyone? How do we replicate our successful working model elsewhere in Victoria? The key issue is finding the funding. Farmers learn from trial sites, from being shown things during field days. Not all farmers are</p>	<ul style="list-style-type: none"> - Information provision and access, adopting new technology, carbon-neutrality,

<p>comfortable with doing these things online. E.g. farmers were told they had to do a biosecurity plan for their farms, but no one taught them how to do it, so we gave workshops for 200 farmers to teach them how. There needs to be better collaboration between the relevant organisations/agencies to help drive these necessary innovations. There's a gap in terms of a collaborative approach, and developing good partnerships for better coverage of services.</p>	<p>environmental sustainability</p> <ul style="list-style-type: none"> - Information provision and access, ensuring equal access - Information provision and access, accessing funding - Regulations, lack of compliance advice - Information provision and access, capacity building to meet regulations - Need for collaboration between organisations/agencies - Need for capacity building to implement innovations/technology
<p>Decisional: What new ideas or innovation would help in the future?</p>	
<p>New technology, upskilling, better working relationship with agencies. The biggest potential idea is the carbon trading conversation. But it's complex and not easy for farmers to jump into. Another solid idea re: drought is just bringing people together. Some of our events during the last drought had over 100 people attending, and it was so important to get people together and talking. Coming out of Covid, people are wanting to be out together in the field, learning. Important to do the upskilling before the next drought happens, so farmers can respond more quickly and make better decisions when drought returns. You need to keep the conversation and plans happening all the time, not just when the next drought hits. There's definitely an appetite for farmers thinking about how to make better decisions.</p>	<ul style="list-style-type: none"> - Importance of capacity building - Importance of collaboration between farmers and organisations - Potential role of carbon farming - Importance of community/farming events, bringing people together - Capacity building to prepare for drought

Stage in drought cycle: Leading into drought	
Objective: How do you/your organisation think about the 'uncertain' period leading into drought period?	
<p>Leading into the last drought, it got to the stage where there's farmers who react, but there's still farmers who won't react. Biggest question is: how do you get the latter to make change? The producers who try to carry on as normal during a drought make things harder for everyone else in the community who are trying to adapt. Leading into a drought, a lot of farmers ask: do we stay, do we hang in, is it viable? Do we start selling stock, or buying?</p> <p>There are trigger points. Need to make sure there's enough information out there about how to act on those trigger points. E.g. before the last drought, we had a very dry and warm Autumn, which was a signal to some farmers that they might need to start pulling back. We find that the good farmers will react more quickly to trigger points now. But there are some farmers who will never change their system. We keep bailing them out. How long do you keep giving drought money to people who are never going to make change?</p>	<ul style="list-style-type: none"> - Capacity building, employing drought strategy - Information provision and access, need for information around 'trigger points' (signal) - 'Bailing out' farmers who won't change to survive drought
Reflective: What does your agency find hard or struggle with during this period?	
<p>Coordination and communication between organisations. Also our Landcare network puts on all these high-attendance events, and we sometimes have to turn people away, because we don't have the resources to supply the demand. And finding the funding is always a struggle.</p> <p>Timing of funding rounds is an issue. Need to resource preparedness for drought before drought happens, so that farmers are ready when drought hits.</p>	<ul style="list-style-type: none"> - Need for collaboration between organisations - Access to resources, financial - Access to resources, timing of funding rounds
Interpretive:	
No questions or responses recorded.	- N/A
Decisional:	
No questions or responses recorded.	- N/A
Stage in drought cycle: Non-drought period	
Objective: Do you have a process of evaluation of your past drought support efforts?	
<p>Yes, at all events we run we ask participants to fill in a survey sheet, because we have to report back to our funding bodies. We always try to grab that data from participants, in a way that works. We find that handwritten forms are more likely to be filled in rather than online survey forms. As well as this, local councils and Ag Vic also take surveys at field days/events and store the information.</p> <p>So we use the feedback data to tweak our events, and also in our surveys we ask people: what else do you want from us? The answers to this inform how we plan for future funding applications and events.</p>	<ul style="list-style-type: none"> - Evaluation requirements for funding - Preference for hard-copy forms over electronic - Alternative sources of evaluations, other organisations

	<ul style="list-style-type: none"> - Feedback used to inform future events
Reflective: Are your members becoming more cautious with increased drought events?	
<p>Yes. I think they're realising they can't rely on the government to bail them out during drought. They want the ability to stand up and be accountable for themselves. If we give farmers the right tools and information, they can stand, and won't need to keep falling back onto government funding. Also farmers want to show a positive side, rather than being seen as the bleeding hearts every time a drought comes through. They want people to know that they do look after their farms and livestock, and are preparing for future droughts.</p>	<ul style="list-style-type: none"> - Benefit of helping farmers prepare for drought, reduce reliance on public support - Social pressure to improve drought resilience
Interpretive:	
No questions or responses recorded.	N/A
Decisional:	
No questions or responses recorded.	N/A
Final questions	
What should the drought hub be working on?	
<p>Getting better awareness of who the key stakeholders are in a drought and their roles, and making that information very accessible. Creating that awareness of who to go to. And upskilling farmers in how to manage their properties to better prepare for and recover from drought.</p> <p>This hub needs to be a one-stop-shop for information and resources. Also need to share resources, work models and information between catchments and regions. E.g. our Landcare group has invested in moisture probes, Riverine Plains has moisture probes, why can't all that information/data be in the same place and be accessible to everyone?</p> <p>I don't want all this work and momentum to be lost. At the moment, we (the organisations and agencies) are not all talking, no one really knows what's going on. If this falls over, our farmers will be the ones that lose out.</p>	<ul style="list-style-type: none"> - Improve awareness on sources of information and support - Capacity building in preparing for drought - Develop shared resources, monitoring equipment - Integrate data from monitoring equipment, between organisations - Improve integration of organisations and agencies
Other comments for this stakeholder to aid follow-up	
No response recorded.	- N/A

6.2 *Summary of consultation: Farm services provider, Mid-age (36-55), Predominantly Male*
Node: Riverine Plains

Stage in drought cycle: In drought	
Objective: What were the main products or advice your clients were seeking?	
<p>Most clients were seeking advice on nitrogen, the single biggest input in cropping. Trying to keep their nitrogen cost as low as possible, but still keeping them in the game in case the right rain fell at the right time and they were able to get bulk in their crops to cut for hay.</p> <p>Quite often it's after drought that clients seek more advice, rather than during. Leading up to a drought, you don't want to change things too much, because the forecasts are never 100% right. Farmers just act a bit conservatively, tweak their rotation a bit, or reduce the cropping scale a bit. Weed control stays the same, is still important during drought.</p> <p>So before and during a drought, more conservative crop rotations, and fertiliser (nitrogen) inputs are the main areas of advice being sought. Also when to chop, or not to chop.</p>	<ul style="list-style-type: none"> - Advisory services, reducing input costs - Advisory services, engagement limited during drought - Uncertainty around climate forecasts - Advisory services, cutting for hay
Objective: What are the main impacts on your business?	
<p>I've worked with the same 20 clients for 17 years now. You go through the good and the bad with them. During droughts it can get a lot busier. Can get a lot of work, very quickly. Trying to get around to 20 clients and 450 paddocks in a short period of time. Logistically it's very hard. Some clients make their own minds up, whereas others want a lot of guidance.</p> <p>In the 2018-2019 drought, all the signs were showing that drought was coming. The farmers didn't really change their plans that much, they kept doing what they were doing, just acted and spent more conservatively. So they scaled back operations and tried to keep going, but things didn't come to a grinding halt. So that's how we approached it, base our plans on the seasonal forecasts, knowing that they're never 100% accurate but they're a good guide. Then there was a huge frost in August that put an end to the season; everything was cut for hay. In 2018 we still got fairly good crop bulk and were able to cut a lot of hay, worth a lot of money. So financially, the farmers here came out of the drought not too badly.</p>	<ul style="list-style-type: none"> - Time constraints to service established clients - Implemented more conservative practices, based on seasonal outlook - Uncertainty around climate forecasts - Impact of frost, cutting hay - Benefit of cutting hay
Reflective: What were the most vivid memories or examples that illustrate how your business / clients reacted?	
<p>All my clients are different, their reactions and needs during drought are all different. Some just get on with it, and decide to just cut the lot. Others don't want to do that, for logistical reasons (e.g. haven't got enough labour), or are more financially committed and have to make every return count. Others that are more financially stable can take more risks and let more country go to grain.</p> <p>Nothing really stands out to me. But droughts are much more work for</p>	<ul style="list-style-type: none"> - Labour/equipment limitation, cutting hay - Impact of financial burden on decision making

farmers than normal years, so post-drought, they are very appreciative, which sticks in my memory.	- Increased workload during drought
Interpretive: What (if anything) would you do differently or offer in addition in the next drought?	
Probably just to be more prepared myself as much as anything, because you go through your clients' emotions with them. There's a lot of mental resilience required. Drought brings out a lot of emotions and difficulty. Making sure I'm prepared about the options available to them, and the available data that could help them. Preparing myself to help them, and be there for them.	- Mental health, personal (advisor) - Mental health, preparing agronomic advice beneficial (to advisor and farmer)
Interpretive: What data, information or resources would help you with drought affected clients that isn't available via your business?	
Data availability isn't too bad now actually. E.g. data from moisture probes and weather stations around the area. We didn't have this data during the 2006-2009 drought, but we do now. I use the Riverine Plains moisture probes, and also ones belonging to the Dookie Land Management Group. Farmers located nearby the probes, or who have probes on their property, use them regularly. E.g. we went into the 2018 season with almost no sub-soil moisture, so we knew that when the frost hit, the crops had to be chopped.	- Benefit of monitoring equipment, to advisors and farmers - Benefit of monitoring equipment, on decision making (cutting hay)
Decisional:	
No questions or reposes recorded.	- N/A
Stage in drought cycle: Recovery after drought	
Objective: What were the first things you advised your clients?	
In this region, financially it wasn't too bad for the farmers, because of good hay yields and high hay prices. But they still didn't have a lot of excess to spend. So we went through the basics to prepare: lime application, fertilisers (particularly phosphorus), to make sure they replaced the nutrients that were removed in the hay. So fertiliser, and liming program. If you miss too many years of liming you get too far behind. But a year following drought is never the year you spend a lot of money. Also tweaking the rotations, nothing too extreme, keeping future years in mind. And pre-emersion weed control, making sure it's in check.	- Favourable market conditions - Ensuring soil health - Financial limitations - Conservation of land/soil
Reflective: In hindsight was there anything else you could have advised that would have helped make this recovery quicker?	
Sometimes you forget some knowledge because there can be quite a few years in between droughts. Just preparing myself and making sure I'm across the data. In the next drought I'm pretty confident I can get the information that I want and they want. We've been through drought enough times that I pretty well know what to do now.	- Advisory services, ensuring knowledge is up to date

Interpretive: Are you in a position to provide this advice now?	
Yes, I am trying to stay current with research and improvements. I'm on the Bendigo GRDC Advisor Updates Planning Committee, and attend the Bendigo Updates every year. I'm in 3 private agronomist groups, which have facilitators to collect information. And I use Twitter for work-related information, e.g. GRDC, PestFacts, etc. to stay updated. It's a lot easier to stay current than it was 20 years ago. Spoilt for information these days, it's just about having time to filter it for your needs.	<ul style="list-style-type: none"> - Advisory services, ensuring knowledge is up to date - Role of RDC events - Role of technology - Community of practice, keeping up to date - Filtering information
Decisional:	
No questions or responses recorded.	- N/A
Stage in drought cycle: Leading into drought	
Objective: What questions or advice do you remember your clients asking for, or you giving, in this period?	
<p>When to cut, or not to cut. What to apply. Using all the indicators you have available to try and forecast what kind of season it will be. In 2018, because of the information we had, e.g. moisture probes and seasonal forecasts, we had a good idea of what to expect. In this region farmers don't really change what they're doing much, whereas in other areas they completely flip what they're doing. But for croppers, you tweak the rotation a little bit, and only use the basic amount of nitrogen. You can prepare for drought a lot easier now than 15 years ago, when there just wasn't the amount of information around, and the long-term weather forecasts were much less accurate.</p> <p>Key advice for croppers leading into drought: tweak their rotation, take a riskier crop out (e.g. barley is more resilient in a drought than wheat). Making sure you have the best wheat variety, or source seed to change to a shorter season variety of canola. Or one that gives more bulk so if there's a frost you can cut more hay from it. Canola makes excellent hay if it's done correctly.</p>	<ul style="list-style-type: none"> - Decision making, when to cut for hay - Role of monitoring equipment networks - Reluctance to change, regional - Importance of crop/variety selection - Considering contingencies, cutting hay
Reflective:	
No questions or responses recorded.	- N/A
Interpretive: What were the areas of advice that you found hard or struggled with during this time?	
You ride the emotions with your clients during a drought, good or bad. You feel what they're going through. I'm lucky that none of my clients are people who would hold me accountable for any decisions I advise. I try to make sure to explain about the downsides of anything I suggest to them. While I do feel responsibility to provide good advice, at the end of the day	<ul style="list-style-type: none"> - Accountability on farmer - Providing cautious and frank advice

<p>the final decision is theirs, and all I can give them is accurate information and my opinion.</p>	<ul style="list-style-type: none"> - Mental health, importance of providing quality advice
<p>Decisional: What would help you avoid or reduce those struggles leading into future droughts?</p>	
<p>Might be helpful to learn more about how to manage the emotional/mental health effects of drought on clients. I remember listening to talks by people like Dennis Hoiberg (psychologist) many years ago around mental health resilience. It's about preparing myself as much as anything. You ride the waves of emotions with your clients but there's no point getting too down yourself. You just have to try and make the best of the situation, because we can't control the drought. That's the best way to help them. I've had a few instances where I could see clients were in a bad way, but luckily during the two most recent droughts, plenty of support was around. The mental health support is much more accessible now than it used to be.</p>	<ul style="list-style-type: none"> - Capacity building, mental health support - Mental health, maintaining personal - Mental health, value of support services - Access to support services has improved
<p>Stage in drought cycle: Non-drought period</p>	
<p>Ojective: What have you advised your clients in the most recent good period to prepare for the next drought?</p>	
<p>In a full-on cropping system where there's a lot risk, and you haven't got the fallback of stock to give you financial flexibility, making sure you're doing the best job not only for this year and next year, but long term as well. In this region it's looking at changing rotations. I often recommend introducing fava beans and other legumes into the rotation. Approximately half my clients now are growing fava beans. Including fava beans in your rotation increases longer term resilience of the system. E.g. during the 2018-2019 drought, my best crops were ones that had long-term fava bean histories. Some canola was going over 2 tonne/ha, and it was grown on fava bean stubbles or paddocks that had a long-term fava bean history. Other farmers saw this, and wanted to introduce fava beans to make themselves more resilient.</p> <p>All I can do is prepare my clients and make them more resilient, before the next drought hits. Trying to increase the odds that if next year is a drought year they'll still get some crop. Diversity in your rotation is a good resilience builder. Rather than just a canola, wheat, canola, wheat rotation.</p> <p>Storage is also very important. Some of my clients are starting to build permanent storage structures (silos) now, after only having temporary bag storage in the past. I try to communicate the benefits of what other clients are doing.</p> <p>Between crops, summer weed control is extremely important. Capturing good summer rain is increasingly important. If you can go into the season with a full profile of moisture, even if it is a dry year, you can end up with not a bad result. All about preparing for the drought before it hits.</p>	<ul style="list-style-type: none"> - Benefit of mixed farming on resilience - Improving resilience, diversity in crops (introducing legumes) - Improving resilience, storage infrastructure - Water use efficiency, winter weed control - Water use efficiency, soil health
<p>Reflective: How has this advice been received i.e. how have they reacted?</p>	

<p>Generally the advice has been well-received. When I first started with my client base, only 3 out of 20 were growing fava beans, now it's up to 10 out of 20. Ultimately it's their decision, so I don't push things too hard. All I can do is show them the benefits of it, and use examples of success that other clients have had. Fava beans don't draw deep moisture out, so they leave a lot of moisture behind in the soil profile, which means you can pretty much guarantee a crop for next year. Rather than saying 'you must do this, you must do that', I just give my opinion and observations, show them the benefit.</p> <p>The ones that don't follow my advice have legitimate reasons for doing so, e.g. fava beans have to be stored on-farm, and some farmers don't have the facilities to store it.</p>	<ul style="list-style-type: none"> - Benefit of legumes - Advisory services, providing advice backed by evidence -
Interpretive:	
No questions or responses recorded.	- N/A
Decisional:	
No questions or responses recorded.	- N/A
Final questions	
What should the drought hub be working on?	
Get more accurate long-term forecasts. If that can be improved, we can be more confident predicting what will happen during the year, so that farmers can plan better for what's coming. At the moment we just don't trust long-term forecasts enough.	- Improving long-term climate forecasting
Other comments for this stakeholder to aid follow-up	
No response recorded.	- N/A

6.3 *Summary of consultation: Farmer, Mid-age (36-55), Predominantly Male*
Node: Riverine Plains

Stage in drought cycle: In drought	
Objective: What impact did the last drought have on your farming business?	
<p>You don't forget droughts. In the 2002 drought we cut about 60% of our crops, and all of our canola, and about ½ of our cereals. The dairy industry was hungry for fodder, and bought 100% of everything we produced. We made money that year. So my first experience of a drought, we were in a situation where the dairy industry had access to money, and they paid exorbitant amounts for fodder.</p> <p>Then the millennium drought. In 2006 we took the approach of cutting everything and trying to sell the hay. Problem was that the dairy industry was broke, and there was a huge oversupply of hay. That really had the biggest impact on us. We had this massive realisation that you can cut as much hay as you like, but you can't take a bale of hay into the supermarket to buy food. Then in 2007, instead of cutting everything for hay, we cut only what we absolutely had to and took the majority through to grain. Because the value of grain was higher, and we were still carrying over a lot of fodder. From a business perspective it was a whole other level of decisions we were making, using the experience we'd had.</p> <p>We got through 2007 without massive losses, then in 2008 I took the view that it just can't happen 3 years in a row. We were able to re-finance. The</p>	<ul style="list-style-type: none"> - Farm management, contingency, cutting hay - Market conditions, favourable - Farm management, contingency, cut for hay - Market conditions, unfavourable - Value of experience - Able to access finance

<p>rainfall looked promising at the start of the year. So I was bullish with my decision making, wanted to recoup our losses. That was a poor attitude. We had another dry year, then a severe frost. So that was devastating, we were gutted. But we made fodder, and with the experience of the previous 2 years we worked out that we needed to make squares so that we could get some transport efficiency. We got in as much expertise as we could, to work out the damage from the frost. Applying some economics around how we were going to manage the situation.</p>	<ul style="list-style-type: none"> - Eager to recover debt - Advisory services, sought advice
<p>Objective: What actions worked?</p>	
<p>In the 2018-2019 drought years, we grew modest crops but they were worth money. There wasn't a lot of grain around, because the eastern seaboard was horrendously affected by drought, so commodity prices went up. So we actually turned modest profits during that period, which I attribute to better management, and also attribute to the fact of where we farm: we have soils which have really good water-holding capacity, and we just tend to get that little bit of extra rain. So the things that worked were some farm management strategies like cutting for hay, but that didn't always work, so I had to go and actually get informed about farm economics, and get data to back my decisions.</p>	<ul style="list-style-type: none"> - Minimise input use/cost - Market conditions, favourable - Improved management - Soil conditions, favourable - Climate conditions, favourable - Advisory services, financial - Information provision/access, data - Decision making, informed by data
<p>Objective: Who helped?</p>	
<p>Farming systems group/grower groups, attending field days and events. Having the opportunity to network and come together with your peers. It's those conversations around the table and over coffee, and in the paddocks that are the most important ones, because you're not only learning but you're relieving your stress. You feel less isolated in what you're doing. The peer support and close connection that farming systems groups provide is unparalleled, it's a lot more personal than what state-run agricultural organisations or GRDCs provide.</p>	<ul style="list-style-type: none"> - Importance of farming system groups - Importance of farming events, field days - Importance of peer knowledge/support - Importance of farming system groups, personal/localised information
<p>Objective: What Information sources did you use?</p>	
<p>We used agronomists, and also actually used our peers a huge amount. This is where Riverine Plains played a massive role for us during those drought years, because their field days and events gave us the opportunity to actually come together and talk to our peers, and to look at how other</p>	<ul style="list-style-type: none"> - Advisory services, agronomic

people were managing things. I probably learnt more from peers than I did from anything else. It taught me what questions to ask of the expertise we were employing. Because there were things that I hadn't thought of. That environment was really positive.	<ul style="list-style-type: none"> - Importance of peer knowledge, advice on utilising advisory services - Importance of farming events, field days
Reflective:	
No questions or responses recorded.	- N/A
Interpretive:	
1. What actions would you do differently or take in addition?	
I'll be scarred for life from that year (2008), because a lot of that ill-fated decision making was on my advice, and it totally backfired. It wasn't bad management per se, it was just a way of thinking that had the potential to go pear shaped and it did. So I suppose, you've always got to turn a negative into a positive, but that really made me recognise that there's no rules. E.g., there's no rules that drought can't happen 3 years in a row. Any assumption I make around anything like that, I really now pressure test that to the nth degree because there's just no rules. So it has probably benefitted by my business acumen.	<ul style="list-style-type: none"> - Perception of drought, length - Uncertainty on length of drought - Being optimistic - Risk management
Decisional: What new ideas or innovation would help in the future?	
Field days such as the 'Stubble Trouble' field days run by Riverine Plains. Can't remember what year it was. We grew these massive stubbles the year previous, and then had a wet summer and a lot of greenery came up, and all of a sudden we had this really big issue: we couldn't sow a crop. Riverine Plains quickly organised 3-4 workshops. It was really just a bunch of growers standing in a paddock, with some experts. Was a turning point for me: I thought we were in a lot of trouble, then I went to a couple of those field days and they helped enormously, because it was that think-tank environment, everyone collaborating to try to solve the problem. Provided peer support. Attendance was huge at those field days because: it was an issue that cropped up relatively quickly, and everybody was impacted, and nobody had a sure answer, and the field days were put together in a matter of days and cost nothing. Growers love trial sites, seeing and feeling it all.	<ul style="list-style-type: none"> - Importance farming system groups, facilitating knowledge sharing - Importance of farm events, field days - Importance of farm events, workshops - Importance of trial sites - Targeted field days
Stage in drought cycle: Recovery after drought	
Objective: What were the first actions you took to respond to the drought breaking and did they help?	
The millennium drought taught me the importance of the economics around managing a farm business. That was the impetus for me to go back to school and do an advanced diploma in farm business management. I did a Cert 4 in Agriculture back in 2002. But I knew I needed more information, I felt inadequate around my ability to manage the farm in extreme conditions. The other thing we did was get ourselves in a better financial position. In 2008 we had no livestock. Realised we needed to diversify the farm business, for greater financial stability. We've diversified our business to now be 20% livestock. We're aiming for 30% now. That's a big challenge of	<ul style="list-style-type: none"> - Recognising professional constraints - Capacity building, business management - Business management, diversification

coming out of bad years, it takes a lot of capital to get back into livestock. So it's been a process. These actions absolutely helped. Getting educated, and having that diversification played a massive role in us being able to navigate the 2018-2019 drought.	- Diversification, increase livestock
Objective: Were there information gaps or things preventing you from implementing your plans?	
Lack of farm management/financial knowledge was a huge information gap. So I was able to address the gaps in my knowledge or business acumen by going back and studying and getting that financial awareness.	- Importance of business management
Objective: What unexpected issues did you encounter?	
We didn't expect to have to invest so much in plant equipment. Because now we know, from experience, that the best way to manage weather extremes is to be agile. We have focused on becoming agile, but I didn't expect the level of investment it would take, and how that was a throttle on the business, to manage how to pay for plant equipment where we would normally use contractors or other methods which weren't quite as agile. E.g. Decided to upgrade our lime and gypsum spreader (worth \$20 000), to a machine that could spread urea as well, very accurately. So now we can be so agile with our nitrogen management, but it took another \$70 000 investment to be able to do that. Timing and agility are crucial when going through extreme periods.	- Farm management, importance of versatility - Assets, versatile machinery - Importance of timeliness on operations
Reflective:	
No questions or responses recorded.	- N/A
Interpretive:	
No questions or responses recorded.	- N/A
Decisional:	
No questions or responses recorded.	- N/A
Stage in drought cycle: Leading into drought	
Objective:	
No questions or responses recorded.	- N/A
Reflective: What were the areas that you found hard or struggled with?	
Making that decision of will we or won't we. Also the mental health struggles that come with drought, what could you do to help yourself personally manage that struggle.	- Struggled with decision making
Interpretive: What data, information or support would help the most?	
Support from peers, advisors, family, and like-minded people. I learn as much off my peers as I possibly can. During my farming career I've probably learnt more from my peers than I've learnt from anybody else. That's through field days, and also being in the seed industry I've had access to expertise one-on-one and I drank that knowledge.	- Importance of support by peers, family, friends - Importance of peer knowledge - Advisory services, personal
Decisional: What would help you avoid or reduce those struggles leading into future droughts?	
The most important thing is to relieve yourself of actually making those farm management decisions alone, and make that decision as a collective. It's about surrounding yourself with peers, family, advisors. I use the term 'best-educated decision', and that's helped me relieve a lot of the	- Shared decision making - Shared burden

<p>decision-making pressure. Everything is so fluid; you can only make the best-educated decision. Very important not to isolate yourself, and you need to share the load. Even though you might be the only one that it's affecting financially, if you can surround yourself with like-minded people and expertise, they can help you navigate through that period of making the best-educated decision that you can. There is absolute relief there.</p>	<ul style="list-style-type: none"> - Informed decision making, range of sources
<p>Stage in drought cycle: Non-drought period</p>	
<p>Objective: What have you done in the most recent good period to prepare for the next drought?</p>	
<p>We learnt that summer spray programs were paramount, so we geared ourselves up to make sure that we saved as much moisture as possible. Because any moisture that we saved during that summer period, through keeping stubbles clean of greenery, that was really our pseudo spring. Spring rains are reducing here. So now we routinely conserve moisture over the summer so that we've got that moisture for the growing season.</p>	<ul style="list-style-type: none"> - Water use efficiency, pre-sowing
<p>Objective: How do you make the most from the good times and plan for times of drought?</p>	
<p>Experience is everything in preparing for a drought. We looked seriously at our fertiliser strategy, sowing strategy, and rotation. So for the next drought, we've kind of geared our management system so that we could survive it, but also not make assumptions that it will be survivable, like we did in the millennium drought. That strategy really started in 2010-2012. Was all about bolstering our nutrient levels in the soil, instead of going food to mouth. Having nutrients sitting there in the soil, and you're not getting paid for it as such, might seem like a waste to some people. But if we have good soil nutrition, in the event that we need to really tighten our belt we have the ability to do it. It's similar to having a bunker of silage. It's saving for those periods of hardship, it just relieves the pressure. We also adjusted our sowing rates, sowed lighter crops. Instead of sowing with a standard 80-90 kg of wheat, we sowed at 65 kg. Which still gave us the plant numbers to reach our long-term average, and any extra is a bonus. So we just looked further ahead and tried to create the best water-use efficiency from the crops that we were going to grow. After the millennium drought, we invested in sheep, because of the advantages of co-habiting sheep on dual-purpose crops. Could carry more sheep on less pasture. That has helped us build our livestock enterprise because we could leverage off those dual purpose crops. 2-for-1, because they were pasture but they were also a cash crop as well. That was really how we re-invested back into stock, and we're still doing it. Mixed enterprise = greater financial stability.</p>	<ul style="list-style-type: none"> - Importance of experience - Farm management, developing a strategy - Accepting uncertainty, length of drought - Conservation of land/soil - Water use efficiency, sowing rates - Diversification, mixed farming system
<p>Objective: How do you evaluate your preparedness for the next drought?</p>	
<p>We're as prepared as we can be, not knowing what the next drought will look like. You get experience with every drought you go through. Don't particularly want to go through another one, but that's inevitable. I think I'm better equipped to manage weather extremes than I used to be. That's through both education and peer support.</p>	<ul style="list-style-type: none"> - Value of experience - Value of education - Value of peer support
<p>Reflective:</p>	
<p>No questions or responses recorded.</p>	<ul style="list-style-type: none"> - N/A
<p>Interpretive:</p>	
<p>No questions or responses recorded.</p>	<ul style="list-style-type: none"> - N/A
<p>Decisional:</p>	

No questions or responses recorded.	- N/A
Final questions	
What should the drought hub be working on?	
<p>I think more opportunities for growers to upskill would be beneficial. We get a lot of that through different mechanisms, but I think that business acumen has played a very large role in how I've been able to make positive farm management decisions.</p> <p>Also need more of that soft stuff, e.g. giving growers the opportunity to come together during those tough periods to help manage that. Covid has made those kind of events really impossible. Covid may actually have had a larger impact on us than the droughts, for that reason. Reactiveness and agility in those times of need (that farming systems groups do really well) is really crucial.</p>	<ul style="list-style-type: none"> - Capacity development, business management - Facilitate events, for farmer Farming systems groups facilitating, targeted and timely events
Other comments for this stakeholder to aid follow-up	
Yes absolutely more than happy. This is all about coming together for the common good of our industry and our people, and looking after people.	

6.4 Summary of consultation: Farm services provider, Mid-age (36-55), Predominantly Male
Node: Riverine Plains

Stage in drought cycle: In drought	
Objective: What were the main products or advice your clients were seeking?	
<p>Being a local end user, we have to make sure that we're very price sensitive, mainly wheat, barley and some of the protein meals. In the 2018-2019 drought, a lot of the product was all flowing to the north, so we had to make sure that the local product was there.</p> <p>Most of our grower customers were really wanting to know that A) we were still going to be there and be viable, because they want to make sure their business is still in Corowa, and B) that we're price relative to the other markets. Which we generally are. But that's one of the biggest points: our growers want to sell to us, but also they want to be market relative, and also want us to be sustainable in the long-term.</p>	<ul style="list-style-type: none"> - Ensuring supply of feed grain - Ensuring business stability
Objective: What are the main impacts on your business?	
<p>Rivalea produces pigs, and also makes stockfeed. Approximately 70% of what we make at the feed mill goes to the pigs. The other 30% is sold to external customers in the dairy, beef, sheep, and chicken industries.</p> <p>For us, the main impacts of drought are all about feed cost. Feed cost is about 70-80% of our overall costs, even in the pig production cycle. We're starting to see a grain cost that's \$200/tonne more each year. So the last drought we saw a reduction in the amount of pigs being produced in the second half of 2019/2020. And that has flow-on effects throughout our whole sector, not just at the feed mill but throughout the farms and the contractors as well.</p> <p>So if you're buying grain at \$400/tonne vs. \$200/tonne, that's straight off your bottom line. We tend to see a reduction in the pig population tonnes, and an increase in the drought feeding. Overall as a business, we have to</p>	<ul style="list-style-type: none"> - Input costs, increase - Production decrease - How to reduce input costs

think about what other costs can we trim back? Capital, wages, maintenance, they all get reviewed quite quickly. We actually had some reasonable results throughout those last drought years, but it was mainly to do with the amount of drought feeding that was going on.	
Reflective: What were the most vivid memories or examples that illustrate how your business / clients reacted?	
<p>The biggest impact is that you see less people coming through your business. Usually harvest time is the busiest time for raw materials coming into the mill. During drought there's a huge retraction. Less vehicle movements, and less people coming in. You lose some connection with the growers/customers you'd see in a normal year, because the product demand just isn't there.</p> <p>So a vivid memory is for those 2-3 drought years there was a huge reduction in the amount of people that you see. During a drought, people's businesses aren't sound, and everyone is just trying to get through to that next year to see what the future holds.</p> <p>Rivalea still has to understand what's happening in the local area. Generally our grain base goes up to Lockhart in NSW, and down south to Wangaratta. In the drought years, you have to capture what's there, or expand your network.</p>	<ul style="list-style-type: none"> - Production decrease - Access to inputs, stock feed - Lose customer/supplier relationships - Expanded market, beyond local area
Interpretive:	
No questions or responses recorded.	- N/A
Decisional: What (if anything) would help you to be better prepared to provide advice in the next drought?	
Over the last few years there's been a trend for growers investing in storage. We're also investing in storage. Because now people understand that we're not going to get 5 exceptional years in a row. We're all future-proofing our businesses. The last 2 years have seen some really good tax incentives for growers to spend and increase their capital. We've been doing the same. Growers see that, and they understand that you're trying to grow and future-proof your business, which is what they are doing too.	<ul style="list-style-type: none"> - Risk management, building storage infrastructure - Benefit of tax concessions on capital investment
Stage in drought cycle: Recovery after drought	
Objective: What were the first things you advised your clients?	
<p>When we start to see those decent rains, the way of thinking and the way that growers market their product and we buy it, completely changes. When the drought starts to break, people want to get back to some normalcy, as they start to increase their yield and have more product to market.</p> <p>The changes in thinking take 6-12 months to get back into 'What was I doing before?' and 'What can I do to improve going forward?'. With grain growers, their way of thinking shortens up during drought then elongates over time. Have more time to make those decisions.</p> <p>It's the same for us when we start to come out of drought. Our way of thinking changes, because we've got more time to make good, sustainable</p>	<ul style="list-style-type: none"> - Change in thinking, drought/non-drought periods - Short-term thinking during drought, compared to non-drought period

choices going forward. So when drought breaks people's attitude changes; you can relax a bit.	
Reflective: In hindsight was there anything else you could have advised that would have helped make this recovery quicker?	
During the last drought there was a huge amount of product going to QLD, and this meant local growers were selling to people in QLD that they didn't know or understand. Some people did get burnt in regards to sending product up and not getting paid in the right amount of time, or sometimes not getting paid at all. A few businesses went under in that time. Key advice from that is making sure that people understand who they're dealing with, who they're selling to, and are they reliable? There are people who will sell at \$20-\$25 above the market, but there's huge risk involved in that process.	<ul style="list-style-type: none"> - Lack of customer relationship - Expanded market, beyond local area - Risk of customers not paying
Interpretive: Are you in a position to provide this advice now?	
We will always offer as much information as we can in regards to pricing, both present and going forwards, to all our growers. If someone wants to know what our plans are, we're very upfront with what we'll buy going forward. It's not advice per se, but we make sure that we're giving accurate information. E.g., at the moment, there's such a big crop out there this season, that growers are starting to think about their storage etc. We're telling them that yes, we've got plenty of storage, but don't expect us to buy the whole crop because we don't have unlimited amounts of finance. We are upfront, and let people know that at a certain point the finance will be limiting for us, but the storage won't be.	<ul style="list-style-type: none"> - Communication with suppliers, managing expectations
Decisional:	
No questions or responses recorded.	- N/A
Stage in drought cycle: Leading into drought	
Objective: What questions or advice do you remember your clients asking for, or you giving, in this period?	
Our customers want to make sure that we're still going to be there to buy from them. No one is forward selling through those periods, because no one knows what they're actually going to produce. Harvest time, which is usually 4-6 weeks, becomes a 3-week event, and you need to capture that quickly. So it's about them being aware that we are still there, and we will buy their product at a good market rate. It's about exchanging information between us and the growers, about yields, price, what they see into next year etc. When growers are selling to us, deciding whether they cut crops for fodder or grow it for seed, depends on market price. When growers sell to us they know that they're going to get paid. Also we offer more flexible arrangements for growers delivering to site. We're more flexible with delivery times than other sites. Offering a different level of service.	<ul style="list-style-type: none"> - Maintaining supplier relationships - Communication, sharing market information
Reflective: What worked best and what didn't have much impact?	

<p>Our flexible arrangements and transparency with growers has worked well for us. Before Rivalea, I worked for GrainCorp and Cargill. With those companies, in really good seasons they have massive crops and massive receival at their sites. But then during a drought year they're lucky to even open the gates. Whereas Rivalea is always buying throughout the year and harvest cycle, we're always topping up, so we don't lose that connection with growers. We might see less growers coming in during drought, but we can pick them back up more easily afterwards.</p> <p>We have still made a profit in drought years. Due to setting good business standards, e.g., knowing how to trim and modify the business, so we can take advantage of the good years and weather the bad years.</p>	<ul style="list-style-type: none"> - Maintaining supplier relationships - Benefit of business management, flexibility
<p>Interpretive: What were the areas of advice that you found hard or struggled with during this time?</p>	
<p>The great unknown is always a struggle. But there are lots of risk management tools that we can utilise to assist in the financial side of things.</p> <p>In our region when you have sustained years of drought you lose some workers that make up a good part of your business. So I think it's a bit of struggle losing the people you used to have in your business. I think it's a workforce issue, so when Victoria is in drought, but other places like QLD and northern NSW aren't, there's probably a natural flow of workers following the other job opportunities up there.</p>	<ul style="list-style-type: none"> - Uncertainty - Risk management, financial - Losing employees
<p>Decisional: What would help you avoid or reduce those struggles leading into future droughts?</p>	
<p>To deal with that issue of the drain of staff in the lead up to drought and during drought: it's important to invest in your business, and the capital side of things in the good times. We see that with growers as well, because they've increased their capabilities they're able to manage product over multiple years rather than single years. And we are too. So then you don't have to lose those staff because you've still got product to manage during drought.</p> <p>So it's about being flexible, investing in capital when you can, and having cash on hand to weather the bad times. In our business it's about having the right leadership to make those smart management decisions.</p>	<ul style="list-style-type: none"> - Capital investment, during non-drought period - Business management, ensuring stability for employees
<p>Stage in drought cycle: Non-drought period</p>	
<p>Objective: What have you advised your clients in the most recent good period to prepare for the next drought?</p>	
<p>I've noticed, in the past 2 non-drought years, the way people are interacting and engaging with each other has increased, and they're much more willing to sit and talk about their businesses. I think they're happier to connect because they're happy, and they've got a healthy business. Likewise for Rivalea, we're happier, we've got a better operating environment. Even through Covid I think the agricultural industry has done well, we've been able to operate, communicate and interact. And to have 2 absolutely thumping seasons in a row, during this pandemic, is great. The drought allows you to see who your real customers are, then when you come out of drought you know who to focus on.</p>	<ul style="list-style-type: none"> - Peer-to-peer relationships improve during non-drought period - Building trust
<p>Reflective:</p>	

No questions or responses recorded.	- N/A
Interpretive: Are there other things you believe they could possibly do but you don't have the confidence to advise on?	
<p>Last year we held a safety event with the NSW Farmers Federation and WorkSafe NSW, at Corowa. We had a lot of different growers in the one room, grain growers, farm salespeople, etc. There were people from different regions. It was a great night after the 2 previous tough years. Rivalea doesn't usually do events over multi-operational farms, we normally do events based in your business unit. A lot of the growers said that it was great to connect with people from outside your district, and connect with other industries, e.g. dairy. Those types of engagement opportunities are great. We used the safety event as the hook to get people out, but the event really gave them support on the social side of things.</p> <p>Whether in drought or out of drought, we should be doing those events. I think the business saw that. Hopefully going forward we do it more often. Especially because we're so grower-based, selling or buying.</p>	<ul style="list-style-type: none"> - Benefit of farming events, support through socialising - Benefit of cross-industry engagement
Decisional: If so, what would help you to provide that advise as well?	
To help us in doing more of those type of events: the evidence is there that it's worthwhile doing those events. We need to be proactive about holding these events, and increase our networking reach so that we can reach people in areas that tend to be disconnected. You just have to do it, rather than sit on your heels and think that we can just do this another time. Being proactive during those periods speaks more volume to your growers than not doing anything.	<ul style="list-style-type: none"> - Farming events, opportunity to engage with disengaged growers
Final questions	
What should the drought hub be working on?	
<p>In the last 30 years the seed technologies etc. have progressed so much. The amount of grain these growers are producing during drought years is exceptional. If you told farmers in the 1980s or 1990s what we're doing now in droughts, they wouldn't believe it. So I think the technology side is well taken care of, and that will continue to grow because people are investing so much money there.</p> <p>What we need to focus on is: there needs to be other channels where people can connect with each other, not just about technologies and profits and all that. These growers are actually living out there, sometimes can be a bit remote, but we're still part of the community even though we don't see each other every day. Promoting opportunities to connect, rather than focusing just on the actual business side of things, I think that would be a good thing.</p>	<ul style="list-style-type: none"> - Provide opportunities for people to connect - Community building
Other comments for this stakeholder to aid follow-up	
Yes, Rivalea as a business is happy to keep helping. It's really important for our business but it's important for our growers too, so both buying and selling our material. So we'd be more than happy to.	- N/A

6.5 *Summary of consultation: Advocacy body or community group, Mid-age (36-55), Predominantly Female*
Node: Riverine Plains

Stage in drought cycle: In drought	
Objective: What impacts were there for your membership?	
When farmers keep sucking out of the river system, the thing is, our natural diet was fish. We only ate a little bit of kangaroo, emu, etc., we weren't greedy, we didn't take the whole lot. That river system was our food. We had a lot of fish in our diet. So it affects us when there's no water there because someone's been greedy upstream and taken it all for themselves to get that million dollars in their bank account. If you can't learn to respect the land and the water, you're creating greed, and greed is going to destroy that community.	<ul style="list-style-type: none"> - Overallocation of water, market drivers
Objective: How did people receive support from your organisation?	
The Australian climate is hot and dry at times, then at other times it's cold and wet. In the communities that you interact with, drought is just part of a natural cycle and the communities are generally pretty accepting of drought. Personally, I think you get through drought and it's part of our seasons. You learn to live with it. But you don't learn to live without being able to go to the river and catch yourself a fish. That's where they come back to me as a community leader, and they want to have that yarn and a cuppa with me and work out how we can do better together. That's where I come into it because I can sit with them and have a yarn and a cuppa, and work out what we can do better, to get us through it. As a community.	<ul style="list-style-type: none"> - Natural climate volatility - Perception of drought, part of climate cycle - Importance of community
Reflective: Where did the people you support struggle the most?	
Heartbreaking when a drought comes through and you see the rivers go dry and the landscape suffering. The community is suffering. Because they can't go back to the river and take their whole mob out there and go fishing. The river is a part of us. It's the place where we go to relax, reflect on our lives, everything. You've lost all that, lost that connection. Again, it's greed.	<ul style="list-style-type: none"> - Impact on environment - Overallocation of water, market drivers
Interpretive: What actions would you do differently or take in addition?	
Something we need to see more of: is that the producers and farmers and community are more water-conscious, more environmentally-conscious, more culturally-conscious. Because we're all in this together. The damage is already done. So maybe we work together in solving some of these things and we talk with the First Nations peoples and our ancestors of the region to understand how the landscape has changed and what we can do to protect it.	<ul style="list-style-type: none"> - Improve awareness of environment - Importance of community - Information provision and access, historical climate, water resources
Interpretive: What gaps in responses or support need to be addressed?	
Where people or the community suffer the most. Needing places to go to fish and see the river and see the natural landscape. Other things I noticed in the community in that last drought, was a lot of	<ul style="list-style-type: none"> - Mental health, benefit healthy

<p>suffering. E.g., especially looking at sheep farmers because I spent 30 years in the shearing sheds, and way out there in the sticks they've got no water. They need to learn how to live with that land, if you haven't got that rainfall, your drinking supply is gone. And the shops aren't around the corner to go out and get a bottle of water. They need to learn from our old people how to filter that river system, but if we've got no river system what have we got?</p>	<p>natural environment</p> <ul style="list-style-type: none"> - Mental health, associated with drought - Natural resource management, river systems
<p>Interpretive: Would exposure to new ideas or different networks help at this time?</p>	
<p>Exposure to cultural knowledge and history would help. For 65 000 years our people learned to live with the land, and what it offered us. We didn't go and plant something different, and get rid of all the yams and our natural resources and animals. We lived off that. We had ample supply of kangaroos. Why aren't they doing that now? Why aren't they making an income off those kangaroos if they've got them on their property? Why are they trying to get rid of them, to grow their wheat crop that's going to suck all the water that's underground.</p>	<ul style="list-style-type: none"> - Mismatch of farming systems/product with environment - Alternative farming systems/products, native flora and fauna
<p>Decisional: What would help to make the changes you think are needed?</p>	
<p>People getting an understanding of how the environment interconnects with food and water and all of those things. We've lost our understanding of what connects us to land. If people understood that better then maybe we'd look after it better.</p> <p>Mother Earth is our heartbeat, once she's gone, we're all gone. We've all got a heartbeat and we all care, care about our future generations, and hopefully we can put cultural knowledge into the Drought Hubs so that it can come back to looking after your lands the way the First People did and learning about your seasons, and trying to change your environment to suit those seasons.</p>	<ul style="list-style-type: none"> - Improve awareness of environment - Improve awareness of cost (to environment) of food - Improve (indigenous) cultural knowledge
<p>Decisional: What new ideas or innovation would help for this phase in the future?</p>	
<p>I can only give you an honest opinion on the way that I know how cultural knowledge can help our land, our water system, get rid of that greed. Greed is why we're all suffering now, and the government themselves, they have to change that. We've got to change the politicians, because they're the ones making decisions for the gas and mining. And that affects our farmers, our communities. Don't sell our land. What have we got left? Most of our water is underground, it's not in our rivers.</p> <p>We've learnt to live our cultural lives with only having limited water there. We didn't have greed, we didn't suck out of the river systems. Need to get rid of that irrigation, go back to our seasons, we had more than 4 seasons and we learnt what came with each season, the flora and fauna. That was our income, our trade. So why is it any different now? And you're changing that water system with irrigation, right up through the Murray Darling basin to us here. It affects all of us.</p>	<ul style="list-style-type: none"> - Limitations of capitalist democracy - Increase understanding of natural environment, tailor farming systems - Increase environmental landholdings

Farmers need to realise they've earned enough money off this place, and should sacrifice 1/3 of that property, and start revegetating and rejuvenating. They've earned the money off that land now, why don't they cut it back and sustain the rest of that property? Don't continue on living that greedy life thinking this is the way it should be.	
Stage in drought cycle: Recovery after drought	
Objective: When did your organisation start thinking about recovery from drought? What was the recognition or change point?	
When you see that you've got your supply of medicines, you've got your supply of foods. Animals produce more in better seasons. Kangaroos and emus breed more in better seasons. During droughts, they won't breed. So you see this flush of life.	- Response of natural fauna to drought
Reflective: What would you continue doing next time?	
I'm trying to work with councils on bringing healing and yarning circles so that community – black, white and brindle – have got somewhere to go to and reflect on our ancient stories, our ancient knowledge, of the lands and the particular tribes that lived there. There are stories that they've told there that people just walk by. They've left signs there, the reason why it's good for fishing, the reason why it was good for planting lilies and yams.	- Improve awareness of natural/cultural knowledge
Interpretive:	
No questions or responses recorded.	- N/A
Decisional: What needs to be done better to support recovery?	
In terms of preparing, maybe looking at ways to make farms more drought-proof by looking after the waterways. And cutting back, giving back 1/3 of that property. Keep your ways of doing it, but having the rest of acreage as going back to basics. Letting the land give what it's got to give you, e.g. medicines, bush tucker. If that land on your property offers you that, well that's a pretty good resource. People nowadays are changing their lifestyles, they want to go back to things that haven't been preserved properly, learning how to grow their own. That's what the land, what Mother Earth has given you. Use it.	- Improve natural resource management, waterways - Increase environmental landholdings - Promote alternative (native) products
Stage in drought cycle: Leading into drought	
Objective: How do you/your organisation think about the 'uncertain' period leading into drought period?	
These uncertain periods are not such a difficult thing in the communities you interact with, it's just part of the natural cycle.	- Perception of drought, part of climate cycle
Reflective: What does your agency find hard or struggle with during this period?	
Seeing the way landholders continue to live in greed. Like I said before, you've earned your money, now is the time to minimise, go back to basics. Look after the land. All I'm asking as a First Nations person, is minimise. Go back to the bare minimum and see what that land has got to offer you. If you don't do it, you're going to be chasing your tail for the next 230 years.	- Promote low-impact farming systems
Interpretive: Would exposure to new ideas or different networks help at this time?	

<p>Recommendations of organisations or groups that could help with educating people about the history of the land and our cultural history: I'd recommend going to the Elders. The local Elders of whatever area you're in. They're the ones with the ancestors that lived in that land. I've only lived in this land for the last 30 years, this is not my country, but I'm still here living on it so I'm going to look after it.</p> <p>I go straight to the Elders because everyone else is the same sort of thing: greed. That's why I go to the local Indigenous Elders, and that's the only place I go to.</p> <p>None of the Indigenous liaison officers from Agriculture Victoria have ever come to me. The only people that come to me are the community, because they want to have a cuppa with me and talk about our community and what we can do better.</p>	<ul style="list-style-type: none"> - Improve awareness of local natural/cultural knowledge - Lack of engagement with indigenous people, by government
<p>Decisional: What needs to be done to better support people in this uncertain phase?</p>	
<p>If we had more cultural rangers, that sort of thing, they're very helpful. Get more rangers, get them educated, out there and focused on looking after their lands and teaching the farmers that are adjacent to the rivers etc. How to do burn offs, how to create that flora and fauna process. And regenerating those lands.</p> <p>If you look at the likes of Nari Nari, their lands were given back to them, and they're bringing the lands back to the natural waterways and producing what's naturally there.</p> <p>Need to see what successful Indigenous engagement models are out there, and imitate them here.</p> <p>Even going to tourism, having tourism models that could be useful. Farm stays, that sort of thing. Cultural sites, making them part of tourism. There's cultural sites out there that are over 65 000 years old that white men have ignored. We can turn that into a resource teaching us how do we live on the land now, and what was available back then through drought. And we can turn it into tourism, storytelling.</p> <p>Look at evidence of how Indigenous communities used to farm and manage land, and see if we can bring some of those back, e.g. Bruce Pascoe's work in this region. A lot of these places have got stories to tell, for us to learn from.</p>	<ul style="list-style-type: none"> - Improve natural resource management, promote natural/cultural knowledge - Promote successful indigenous engagement models - Promote tourism of cultural sites - Improve awareness of local natural/cultural knowledge
<p>Stage in drought cycle: Non-drought period</p>	
<p>Objective: What are you doing now (actions) for the next drought (e.g. physical preparations; restructure; innovation; building up funding reserves to assist people, etc)?</p>	
<p>In the community during the good periods, there is a feeling of opportunity to get ready for the next drought. It all looks well and good now, but you'll go through drought again. Why don't you prevent it now, by limiting the amount of cattle that are eating all that grass. Minimalise. Let that 1/3 of your property regenerate. They've got beautiful grasses, no worries, and big crops, but what are they putting into the land to get that big crop? They've already taken enough nutrients out of the ground, start minimalising. You don't need that big crop.</p>	<ul style="list-style-type: none"> - Promote low-impact farming, destocking - Increase environmental landholdings - Consider environmental cost of farming systems

Reflective: Where are you looking for new ideas?	
<p>Currently we don't get access to any information about what Landcare and other networks are doing about sustainability or revegetation. We have to search for information ourselves. When I first came to this area, we decided we'd search for as many Indigenous people that were here, and that's the reason why I'm sitting here now.</p> <p>Awareness creation is very important, showing everyone that there are these incredible resources and people with Indigenous knowledge to draw upon. When they keep taking our land and blocking us from visiting our rivers and land and sites, well you're getting rid of that knowledge as well that that person who could pass on. If we connected some of these First Nations people with landholders and farmers it could be a really beneficial exercise. You don't have to go out there and put on a big show, all you have to do is offer a cuppa and a yarn.</p>	<ul style="list-style-type: none"> - Lack of engagement with Landcare, faming groups - Improve awareness of local natural/cultural knowledge - Loss of indigenous knowledge associated with private property exclusion - Increase engagement between farmers and indigenous elders
Interpretive: What would you like to do differently now?	
No response recorded.	- N/A
Decisional: What needs to be done to better support people in the good period?	
<p>There's an attraction of Indigenous communities to farming or agricultural because of that love of the land. And that could be a resource. Could look at getting more young Indigenous people to assist farmers and then increase that cultural education at the same time. And protecting that cultural knowledge, and keeping it going for the next 65 000 years. It's the next generation that's going to see us through. And it's the next generation that's allowed to vote too. Vote out the politicians and the government selling off our lands, destroying our natural resources. Bring young Indigenous people in and transforming the culture of how we manage the land. Reduce the monoculture of white, male farmers. But you've got to go through the Elders to reach those young ones. Uphold that lore, that respect.</p>	<ul style="list-style-type: none"> - Land management as source of common interest, between farmers and indigenous groups - Limitations of capitalist democracy - Capacity development, young (indigenous) leaders - Promote low-impact, natural farming systems

	<ul style="list-style-type: none"> - Promote indigenous knowledge (lore)
Final questions	
What should the drought hub be working on?	
Everything we've talked about in this interview, but very broadly: increasing the Indigenous engagement opportunities with farmers, landholders and community, and introducing cultural knowledge and wisdom into the Drought Hub projects.	<ul style="list-style-type: none"> - Increase engagement with indigenous people - Promote cultural knowledge - Include indigenous knowledge in drought hub activities
Other comments for this stakeholder to aid follow-up	
Absolutely. I started with this, I want to finish it. Finish it on a non-greedy future, of coming together as one. Black, white and brindle. We can all come together.	<ul style="list-style-type: none"> - Community building

6.6 *Summary of consultation: Farmer, Mid-age (36-55), Predominantly Female*
Node: Riverine Plains

Stage in drought cycle: In drought	
Objective: What impact did the last drought have on your farming business?	
In 2019, we cut the whole farm for hay, so we didn't harvest, didn't put the headers in the paddock at all. We made every crop into hay. The kids still remember the 'Great Wall of China' – bales and bales of hay lined up in the paddocks. We've just sold the last bit recently. It's taken a lot of work. We had 4 or 5 trucks a day for a while, just picking up hay and heading to QLD. That's my memory of the last drought. We were very fortunate we still made a profit, but it was a lot more manpower. My husband spent countless hours just stacking hay. It's a lot more manual work than just driving in the paddock, harvesting the crop and then putting it in the silo. A lot more manual labour.	<ul style="list-style-type: none"> - Farm management contingency, cutting hay - Favourable market conditions - Additional work involved in cutting hay
Objective: What actions worked?	
We used big square bales, because they're easier to transport, and easier to stack in sheds. We capped pretty much all of it. Had to cap them because we didn't have the shed space to fit all the hay. Capping was a massive job too. There's still caps lying around the farm today. So when you're selling the hay you can it's been shed-ed or capped. It maintains the integrity of the hay, e.g. when it rains on the hay bales. It wasn't a monumental decision to cut the farm for hay, it just happened. We didn't get that September rain, everything happened really quickly. Had a frost the year before, which affected the growth of the crops hugely too. Frosts often come hand in hand with droughts. So it was just a quick	<ul style="list-style-type: none"> - Decision to cut hay made by conditions - High likelihood for frosts to coincide with drought - Additional work involved in cutting hay

<p>decision we had to make, our agronomists said the crops wouldn't come of anything, so let's cut them while they're still worth feed.</p>	<ul style="list-style-type: none"> - Role of advice from agronomists
<p>Objective: What Information sources did you use?</p>	
<p>Got advice from agronomists, and also our neighbours. Also, I was working for FAR at the time, working with Michael Straight. We had a research station on our farm during those drought years, which helped us to see what was happening with the trial crops. Helped us make the decision to cut our crops, rather than wait. We were fortunate to have that research advice during that year.</p> <p>Also our partner on the farm was an agronomist before coming onto the farm, and plus I have a degree in Agricultural Science. So we all worked together to make that decision.</p>	<ul style="list-style-type: none"> - Advice from peers - Advisory services, agronomic - Benefit of on-farm research trails - Farmer had professional qualifications
<p>Reflective: How did the last drought impact you personally? (struggles?)</p>	
<p>Hugely disappointing to have to cut your entire crop, it was looking so good. Like every year, e.g. this year it's looking great and they've started windrowing and are just about to start cutting. But I always say, it's not done until it's in the silo. You never know it's a good year until it's all finished, and sold. So many hurdles to get there, but that's what farming is, they're gamblers. You can't change the weather.</p>	<ul style="list-style-type: none"> - Disappointment after good start - Uncertainty until harvest - Fatalism around conditions
<p>Reflective: What would you do again when the next drought occurs?</p>	
<p>I hope we never have to do it again (cut all crops for hay), but I suppose it was the right decision, because at the end of the day we still made a profit. But I could just see the labour factor of doing it, it was such a trying and stressful time. Then the work to get rid of the hay. We had a little bit left that we kept, but should have sold because the price dropped and didn't come back up. The physical effort required. I've never seen so much hay in my life, it was unbelievable.</p> <p>So yes, we would do it again because it did work. With cropping, you don't have the ability to sell stock during drought and then get more later. You just have to make the decision to cut or not, and make it quickly. If you leave it too late you miss the opportunity.</p>	<ul style="list-style-type: none"> - Correct but difficult decision, cutting hay - Additional work in cutting hay - Additional stress cutting hay - Limitation of cropping, non-liquid assets - Importance of timely decision making
<p>Interpretive: What actions would you do differently or take in addition?</p>	
<p>We were very lucky having FAR and that research station on the farm that year. That really helped. I spoke to a farmer friend the weekend before we cut, and she was under the impression that things weren't bad enough to cut. But we knew better than that, knew things ahead of time. So we were very fortunate.</p> <p>So next drought we'd just have to rely on our agronomist, but he is often busy during drought visiting every other farm too. We're fortunate that as a community we have a lot of farmers that support each other, compare notes. They don't keep things to themselves, are happy to discuss openly.</p>	<ul style="list-style-type: none"> - Benefit of on-farm research trails - Differing impression of severity of drought, associated decision making

	<ul style="list-style-type: none"> - Role of advisory services, agronomy - Benefit of peer knowledge/support
Interpretive: Did thinking about recovery help you?	
We would do it again (cut for hay), but it is just so heartbreaking that all your work and all the fertiliser you put into it, you're not going to get that benefit. But then we are lucky that a lot of it would stay in the soil. If you cut it early enough, the crop isn't going to suck everything out of the soil. In the recovery stage, we want to leave as much in the bank for our next crop.	<ul style="list-style-type: none"> - Importance of timely decision making, conservation of fertiliser
Interpretive: What gaps in responses or support need to be addressed?	
<p>We knew some people who did harvest during the drought, and didn't get very good results. A lot of the grain was empty, due to frost and drought. Had to salvage as much as they could get. I think they decided to harvest because they believed it was OK.</p> <p>Plus not everyone has the ability to cut every crop for hay. We were lucky we had our own mowers and could get someone to bale it for us. That's a real issue at a time when everyone is cutting every paddock for hay. We could cut and rake ours, then had someone to bale it (one of our neighbours is a big contractor). If you didn't have anybody to help you, that would be hard. Or if you had never experienced doing hay before, that would be hard. Whereas we do at least one paddock of hay most years. We're close to dairy farms here so we can sell it close by. And we also have the trucks, the ability to cart hay to farms. A lot of farmers don't have the ability to cart hay themselves, or don't have those connections. A lot of them just know harvesting and that's all they do.</p> <p>So the gaps we observed were: poor access to the knowledge, infrastructure and workforce to make management decisions such as cutting everything. Again re: workforce, we're fortunate that we have a big family, and everyone got involved and helped during the drought.</p>	<ul style="list-style-type: none"> - Demand for contracting services, mowers/balers - Benefit of owning machinery - Value of experience - Access to market for hay - Access to knowledge, machinery, labour - Decision making hinged on access to inputs
Decisional: What would help to make these changes?,2. What new ideas or innovation would help in the future?	
No response recorded.	- N/A
Decisional: What new ideas or innovation would help in the future?	
People talk about being really busy during drought, and then there's a slump post-drought. During drought you need extra hands to help cut for hay, feed your stock, etc. Need reactive workforce during drought times. Even with dairy farms, it's more work during drought because it's harder to feed your cows than it is to just put them in a paddock. So workforce is a big gap, but then there's the cost of having more workers during drought too, that's the problem. People know they can't afford it. So also need to support people mentally too.	<ul style="list-style-type: none"> - Increased workload during drought - Access to labour - Need for support services, mental health
Stage in drought cycle: Recovering after drought	

Objective: What were the first actions you took to respond to the drought breaking and did they help?	
<p>I suppose we were fortunate that once all the hay was done, that was it, the paddocks were bare. Then we had until April/May the next year to make decisions. We had thought about it, knew we didn't want to spend a lot of money on fertiliser and getting the paddocks ready, in case we had another drought year. Didn't want to waste money we couldn't afford. So I suppose you have to wait to know if it will rain in April/May, and if it doesn't we plant the drought-tolerant crops. We're lucky we've got a lot of trial research now. We put in more hardy crops, or shorter season varieties, and maybe put them in a bit later and harvest them earlier, so that if we don't get the rainfall, the season isn't as long.</p> <p>When the drought breaks: You've got to spend money to make money. But have to be careful how much you spend. Always hopeful we'll have a good year. E.g. this year we have bought a new header. So on the back of 2 good years we bought this new header. Investing for the future. But have to be careful. When the farmers are struggling, the town struggles.</p>	<ul style="list-style-type: none"> - Caution after drought, reducing input costs, - Caution after drought, drought-tolerant varieties - Business management, investing in machinery - Effect on community
Objective: How long did this recovery take?	
<p>The recovery phase after the last drought was probably not as dramatic as it would have been with stock. E.g. with stock you sell them during drought then you have to restock again.</p> <p>Whereas with us...you do hesitate to put your whole farm into crop again, worrying about the cost of seed, in case there's another drought year. But it's a risk we took. You just do it, and hope and pray that it'll rain when you need it to. We were very cautious but we had to keep going and put the whole farm into crop in order to be a viable business.</p> <p>With dryland farming, you're more in touch with the seasons and you just deal. You have to be. It can still be a dry year, but as long as you get rain at the right times.</p>	<ul style="list-style-type: none"> - Perceived benefit of mixed farming over cropping - Caution after drought, input costs - Awareness of seasonal climate
Objective: What unexpected issues did you encounter?	
<p>Didn't encounter many unexpected issues. Being dryland farmers we probably are more prepared for drier times. Whereas the irrigators have the ability to put that extra water on.</p> <p>Historically we only had one block (600 acres) of irrigation, it was an older block and it was all flood. It would have cost so much to bring it up to date to irrigation practices, so we sold that water. In the irrigation industry you really have to keep up with it, keep everything up to date. It just wasn't viable.</p>	<ul style="list-style-type: none"> - Preparedness for drought over irrigators - Cost of infrastructure maintenance for irrigators
Reflective: Was there anything else that would have helped make this recovery smoother or quicker?	
No response recorded.	- N/A
Interpretive: What support helps the most?	
<p>I think the contacts help. In 2018 we didn't cut the whole farm for hay, just some of it, so we kind of had those contacts already. And we also had the ability to do it. Then in 2019, when the dry was really bad, we didn't hesitate, we just did it. We learned from our experience the previous year. So experience is a big thing. And having the contacts, knowing who to</p>	<ul style="list-style-type: none"> - Preparation, knowledge of market for hay - Value of experience

contact. E.g. we've got a lot of dairy farmers that we deal with regularly. We sold a lot of hay through a certain hay company (can't remember the name), and they organised the trucks, all we had to do was load them. Had 5 or 6 B-doubles coming to the farm per day during its peak. Was so good to have that issue outsourced, otherwise you'd just go crazy with the logistics of it all. Loading the trucks was a big enough job.	<ul style="list-style-type: none"> - Benefit of contractors, reduce workload/stress
Decisional: What would help ensure things are in place before the next drought?	
No response recorded.	<ul style="list-style-type: none"> - N/A
Stage in drought cycle: Leading into drought	
Objective: What do you remember about this uncertain period leading into drought?	
I suppose you know it's dry and that it's been a dry year, but you kind of keep hoping that you're going to get that good Spring rain. In this area, the Yarrawonga Show is on the first weekend of October. So we say that if you're looking for rain at the Yarrawonga Show, you know things are dry. The farmers all meet at the bar at the show and talk about the rain. That's when you really realise you're in trouble. And at the time I was working in the research trials too, so we knew that the trial wasn't looking too good, so we had a bit of warning in the lead-in. It was a horrible feeling, I remember feeling sick. Thought we couldn't possibly cut the whole farm to hay. And the crops still look green and OK at this stage, we call it a 'green drought'. But there's no seed in them. It was never going to come of anything. It's hard for people to understand that.	<ul style="list-style-type: none"> - Hoping for rain, despite seasonal climate - Local knowledge/rules of thumb - Mental health, anxiety associated with expected drought
Objective: What indicators do you use to judge what you do?	
<p>We did a fair bit of dry samples, in the oven at Riverine Plains, to see what tonnage it would bring, if it would come of anything. We were lucky, Riverine Plains helped a fair bit with that. Think we used the Rutherglen ovens too. So that really helped, but every farmer can't access that because there's just not enough room.</p> <p>We used the Riverine Plains weather station, I think for a while it wasn't working though. But we did have a little bit of access to it. We've got our basic, on-farm stuff, but we don't have that actual access to actual weather stations.</p> <p>We do some soil moisture testing with agronomists.</p>	<ul style="list-style-type: none"> - Value of farming system groups - Information provision and access, limited tools for predicting yield - Information provision and access, limited weather monitoring tools - Information provision and access, reliant on public/organisation weather data
Reflective: What were the areas that you found hard or struggled with?	
My husband and his cousin are partners on the farm, and for them they struggled with the feeling of self-doubt: are we doing the right thing? They were really doubting their own abilities as farmers. Should we do it/should we not do it?	<ul style="list-style-type: none"> - Decision making, self-doubt

<p>And we struggled with watching the year progress, and seeing that all your hard work is worth nothing at the end.</p>	
<p>Interpretive: What data, information or support would help the most?</p>	
<p>In terms of emotional support, I suppose we just supported each other, and neighbours supported each other. Riverine Plains did help too, saying 'we're here if you need someone to talk to'. I used to work for Ag Vic, but we don't actually have a lot to do with them. But we do had a bit to do with Dale Grey when he was in this area. But there is that gap, with DPI having moved, we have lost touch with them.</p> <p>Our partner on the farm went to Dookie College, so he has a lot of contacts he can ring around. We're fortunate to have those contacts and that support that some farmers might not have.</p> <p>There's been a big gap these last couple of Covid years, having no field days or ability to come together and talk to each other.</p> <p>In the year leading into the last drought we attended the Riverine Plains field day, and that really helped. Different people there talking, and we realised that it was about the trial but it was also more about what we needed to do. The field day was the end of September, it was perfect timing. Huge turnout, because no one knew what to do.</p>	<ul style="list-style-type: none"> - Support services, family, community of place/practice/interest - Impact of COVID-19, preventing farming events - Benefit of farming events, field days - Importance of timely farming events
<p>Decisional: What would help you avoid or reduce those struggles leading into future droughts?</p>	
<p>Green spaces for people to go to when it's getting dry. I remember during the Millennium Drought I was working in the dairy industry, and a woman told me she was so excited because her husband said she could use some water to water the lawn. They'd had no lawn for years, and that was the most exciting thing for her, to have a lawn again. They had lived with total dry for so long.</p> <p>Local shire or farming systems groups could provide a park or other green space for people to go to. Or hold an event when everyone is at rock bottom. And the kids do get affected too, my kids hated the hay. They still talk about it often, how all you could see was hay. Never want to see another bale of hay again. It's a psychological thing.</p>	<ul style="list-style-type: none"> - Importance of maintaining green spaces, on-farm/in-community - Mental health, impact on family
<p>Stage in drought cycle: Non- drought period</p>	
<p>Objective: What have you done in the most recent good period to prepare for the next drought?</p>	
<p>We do a bit of off-farm contracting now, go to Tasmania to do the Pyrethrum every year. Allows us to get some income when the 2 headers we have aren't doing a lot here. It's another way of helping the farm get that extra income.</p> <p>Having 2 headers allows you to harvest in a shorter timeframe too. E.g. if we knew rain was coming and we were harvesting, we'd be able to get more done than if we just had one header. Having that equipment makes us reactive.</p>	<ul style="list-style-type: none"> - Benefit of external income, contracting - Benefit of additional machinery, two headers
<p>Objective: What preparations are you making for the next drought now? (e.g % cash reserves?)</p>	
<p>Our farm has been in the family for a very long time, and we are fortunate that the farm has been set up well. And we're still setting it up, it's ongoing. But I think that if we had another big drought now we'd have the ability to get through it.</p> <p>Hard to plan for drought though, don't know how severe it will be until it's</p>	<ul style="list-style-type: none"> - Preparation for drought, long-term business structure

<p>happening. We try to make sure there's enough fertiliser in the ground, keep ahead in that aspect. Try not to burn too much stubble. Retention. Explore different varieties. Keeping up to date with good equipment, and making sure the equipment we do have is looked after so we don't have to replace it too much.</p>	<ul style="list-style-type: none"> - Preparation for drought, short term, soil preparation, equipment maintenance
<p>Objective: How do you evaluate your preparedness for the next drought?</p>	
<p>It's still something my husband and his partner on the farm always talk about. I'm not involved with the real nitty gritty of what crops are going in where, but I know the boys are always aware of different varieties, and not putting all their eggs in one basket. Even though we are all cropping, which can be a risk at times. Especially here where we don't have any land across the river. So if we don't get any rain here, basically the whole farm is in drought. Less risky if you have a bit of land somewhere else. We're often thinking about buying land elsewhere, but land is pretty hard to get at the moment. It's something that's always in our heads. So we're not as prepared as we could be, if we had access to multiple farm sites. But we're pretty prepared financially, in that we do prepare for the good and bad times. I'd like to think that we're not in a bad position, but you just don't know until it hits you.</p>	<ul style="list-style-type: none"> - Information provision and access, keeping up to date - Risk management, crop diversity - Risk management, geographic diversity - Risk management, financial preparation - Uncertainty around preparedness
<p>Reflective: What's changing in the good times compared to the past? Are some things harder/easier? Faster/slower? Shorter/longer?</p>	
<p>We used to have sheep on the farm, but sold them all in the Millennium Drought. I don't know if things are getting easier or harder. I think things will change as the next generation comes on. Talking about different ways of doing things.</p>	<ul style="list-style-type: none"> - Farm management, considering different systems
<p>Interpretive: Are there other things you could possibly do?</p>	
<p>I suppose keeping in touch with people more, and constantly trying to improve your farming methods. It's hard to prepare though, and it's psychological too. You have to get in your head to deal with it too.</p>	<ul style="list-style-type: none"> - Maintaining relationships - Farm management, considering different systems - Mental health, preparing for drought
<p>Decisional:</p>	
<p>No questions or responses recorded.</p>	<ul style="list-style-type: none"> - NA
<p>Final questions</p>	
<p>What should the drought hub be working on?</p>	

<p>It's funny because when I first heard about the drought hub I was wondering 'why are they talking about drought now, we're not in drought' We're having field days cancelled because of rain. I couldn't get my head around it. But once I did all the reading it made total sense. Having worked with extension and farmers for so long, I think the drought hub is a great idea.</p> <p>I think you need to hide the 'drought' word, because farmers are just going to dismiss it if we're not currently in drought. But there still needs to be that toolbox and that information available to them.</p>	<ul style="list-style-type: none"> - Value of considering drought during non-drought period - Rebrand hub, remove reference to 'drought'
<p>Other comments for this stakeholder to aid follow-up</p>	
<p>Happy to be asked, but might have to say no if I can't at the time. I work off-farm 3 days a week, and it's a crazy time right now. But if I have the ability to do it, I will.</p>	

6.7 *Summary of consultation: Government or other statutory authority, Young (18-35), Predominantly Female*
Node: Riverine Plains

Stage in drought cycle: In drought	
Objective: What impacts did you note in the region?	
<p>Depends on the lens you are viewing drought through. The State of Victoria doesn't declare drought, just 'drier times' or 'extreme dry' when there is less rainfall. In 2018-19 we had 'extreme dry', which some people would call drought. Before that was the Millennium drought which had a pretty big impact here.</p> <p>I was working in water sector when it was 'drier', and the Goulburn-Murray Irrigation District had a man-made drought (not Federal Government wording, farmers' wording) when there were water reform changes through the State of Victoria.</p> <p>I think it's very different when you talk about drought in our region, because we're in an irrigation district that was meant to be drought-proof. I've heard from irrigators that we've had a man-made drought here, and they've had to deal with a lot of business operation changes, with the reduction of water and the cost of water during the dry times since the changes came into place in 2013.</p> <p>Man-made drought = water became a separate asset from land (unbundling). Regulation changes to the temporary water market came into effect through the connections project and buybacks, and water buybacks between state and federal from farmers. So more water went back to the environment purposes, state and federal, so therefore the price of water rose when it became drier. Price went from \$45/ML to \$800/ML. That changed a lot of business decisions farmers made.</p> <p>With some of the other changes and the different demands down south, water is a commodity now, it's not an input. So that's a challenge there. Negative and positive changes in the industry? For some dairy farmers, when the corporations bought them out, it was a great opportunity to go elsewhere to continue farming. They bought up big parcels of water, above the choke, and with groundwater access.</p> <p>Positives = dairy has come right around since its collapse. In the Murray Valley Irrigation Area (within the Goulburn Murray Irrigation District), they've had a real change and a rebirth of the region due to the amount of money coming in. This has been a massive benefit, not just stopping at farm gate, it's also the people they're employing on farms, the product, etc. Positive from an economic lens.</p> <p>The negative lens is the environmental damage that's been done down the Murray River and all the other different rivers. The damage to the riverbanks from the amount of water that's been going down the rivers. Coming from me, a community member who lives right near the Goulburn River. We're moving a lot of water around for trade and for use, and we're using rivers as those opportunities to move water from NSW down to SA, so something's got to give in that.</p>	<ul style="list-style-type: none"> - Perception of drought, farmer versus government - Perception of drought, drought-proof irrigation - Changing business environment - Regulations, impact of unbundling - Regulations, water as commodity - Regulations, water market volatility - Regulations, strategic land acquisition - Regulations, impact of water movement on environment
Objective: What clients/constituents needed the most support? (demographics)	

<p>The dairy farmers were hit hard, and on top of that was the dairy collapse as well.</p> <p>Some farmers who made business decisions such as relying on temporary water for growing crops, after trying to make better through the water buybacks, those farmers aren't operating anymore because they couldn't afford the water.</p> <p>Also the effects of water trading on the sector, because there have been other rules that have been brought in that has changed the way trading is done. Because there was less water around, the price of water has gone through the roof on a permanent basis. And the market is volatile and immature.</p>	<ul style="list-style-type: none"> - Regulations, water market volatility - Regulations, impact of instability on farming businesses
<p>Reflective: Where did the people you support struggle the most?</p>	
<p>In this region you've got dryland farmers that just rely on rainfall. But what has changed in the irrigation district now is, a lot of the croppers are doing broadacre farming. They will have their crops sown to where irrigation can be done, but they'll decide whether or not they irrigate and how much. And we have dryland farmers in irrigation land as well. On top of horticulture, dairy, etc.</p> <p>Some farmers that have irrigation through the tough times and who could afford water, told me that on their dryland farm that had no access to water they struggled to get 1.5-2 tonnes/ha off. On their irrigated crop, when they did decide to water they got 8 tonnes/ha off.</p> <p>The price of water as a commodity has gone through the roof. That's why so many farmers have shifted towards dryland.</p> <p>The other big driver for this change was the collapse of Murray Goulburn dairy. So there were some dairy assets, and the people who could afford to buy those depleted assets converted dairy into cropping. So there's been a big change with even the type of purchaser of that land – some have been large corporations that have come in.</p> <p>In summary, in the irrigated world, drought isn't the only struggle farmers have to deal with that can be transformational.</p>	<ul style="list-style-type: none"> - Farm management, ability to switch between irrigated and dryland cropping - Risk management, dryland when water is too expensive - Other (market/infrastructure) impacts on farming system change
<p>Interpretive: What gaps in responses or support need to be addressed?</p>	
<p>For farmers here, water policy is probably their biggest risk, more so than drought.</p> <p>The biggest problem for farmer is that in drought, there's no opportunity to pivot your business. It takes so much time and capital investment to pivot your business in agriculture. It's near impossible. E.g. during drought most farmers destock their cattle because they can't afford to feed them, but then they can't pivot their business in the good times because they can't capitalise off the best seasons.</p> <p>I have a small cattle herd, I'm a first generation farmer. I kept my cattle going during the dry times, it cost me so much, it has jeopardised me buying land earlier, because I used that money to put into my cattle to keep them. And although I'm reaping some small rewards now, I'm still so far behind compared to what I could have been if I had had assistance through that.</p> <p>So the gap that I see: I can't get any drought assistance. I work off-farm</p>	<ul style="list-style-type: none"> - Drought as opportunity to change - Lack of support/funding for young/new farmers - Benefit of off-farm income

<p>too, but I'm a young first generation farmer coming through with a long-term vision and a business case. They don't understand that you lease farms and you have to do different things to get into the industry. I know of other people that are 3rd generation farmers, and are trying to step away from their parents, that are leasing land and doing all that, but they're also hindered when it comes to support, or opportunities for grants to enhance their business. Eligibility for grants and assistance is a huge issue.</p> <p>Having an off-farm income makes you more resilient, but it jeopardises your ability to apply for any infrastructure upgrade grants or anything like that, so that's a huge gap.</p>	
<p>Decisional: What would help to make these changes?</p>	
<p>Comes down to program and policy design and development. For myself, I feed into Ag Vic directly, and I escalate and advocate the issues that I hear from farmers around our guidelines for grants. I've also escalated that to the Aus Gov as well and into DAWE.</p> <p>Another gap is that there are so many different drought grants, and people apply for them when they are at their most vulnerable, then get rejected and decide to never apply for another one. Once they have that negative experience they just won't try it again. And/or they assess themselves out of it, they say 'well we didn't get the last one, so we won't get this one either'. We need to create a story of change, through local, State or Federal Gov, around what a farm actually looks like. A recent research piece said a \$5 million farming asset might make a very base salary for someone if you broke it down. Farmers are asset-rich, cashflow poor. If a farmer's family has an off-farm income (e.g. teaching) to bring in that cashflow, that shouldn't jeopardise them for assistance, because that off-farm income is making them resilient.</p> <p>Accessing loans for farming land is highly complex and limiting, compared to accessing loans for a residential house. E.g. For me personally, I can't use my cattle as any equity, so my parents have to help me, and it's going to be near impossible. I'll need a 60% deposit of \$600 000 for 100 acres. But if I wanted to buy a residential house they'd only need a 20% deposit and they'd give me \$1.2 million straight up, based on what I earn and what I've got. This is my lived experience.</p> <p>In summary, the gap is having good policy design and having a clear understanding of how farm businesses work. When policies are put in place, they're coarse. They might help a very small proportion. But mostly the policies actually create disadvantage unintentionally, and disengagement. It's not as simple as throwing money at something, it needs to be much deeper.</p> <p>When we asked famers, 'what is your expectation of the Aus Gov during drought?'. They said they don't want handouts. They need help with coming out the other side when cashflow is extremely poor. So that's a gap. Recovery looks different for different industries. Some people make a lot of money in drought, e.g. hay producers. During good times, there's hay everywhere, so they actually prefer drought because their commodity is valuable.</p>	<ul style="list-style-type: none"> - Farmer/advisor driven program/policy design - Drought relief/support, eligibility barrier to applying - Drought relief/support, application process as barrier - Access to financial resources, limited by loan conditions - Improve equity of program/policy design, better understanding of individual situations - Lack of awareness of support services/programs

Another huge gap is awareness and accessibility of the Future Drought Fund. Most farmers have no idea what's going on/what's available to them. Even ones who are on top of their research. A lot of work needs to be done to get the information widely accessible to all. So that people can be as well-informed as possible.	
Stage in drought cycle: Recovery after drought	
Objective: What were the first actions you took to respond to the drought breaking?	
No response recorded.	- N/A
Reflective: Was there anything else that would have meant recovery was smoother or quicker?	
Cash really helps with a smooth and quick recovery. And helps to prepare for the next drought.	- Access to financial resources
Interpretive:	
No questions or response recorded.	- N/A
Decisional: What new ideas or innovation would help in the future?	
<p>When asked this question, farmers and agronomists talk about the management system, e.g., more fava beans in their rotation, and reactive field days or events during the recovery phase of drought so that when people are really struggling they can go and talk to someone. Those things are pretty discrete.</p> <p>What would help in the future is: getting the policy design right, making sure the support is going to deliver what you need, so that ultimately you're preparing the agricultural sector to be able to recover.</p> <p>Also being aware what are your risks and what are your opportunities, in and out of drought, is a huge thing. Some other things I've heard from a community level is: when everything is dusty it would be nice to be able to have a green area for kids to play on at the local community hub. So that's really important.</p> <p>The other thing is assisting people to capitalise on the good times that follow when a drought breaks. If they can recover quickly and can be better prepared, then they shouldn't dip below to be worse off during the next drought. It's even around opening up discussions and looking across industries for what can work and what could be done better as well. That would be really interesting.</p>	<ul style="list-style-type: none"> - Targeted capacity building - Improved policy design, during recovery - Maintenance of community parks/ovals - Improve communication between farmers and government - Importance of taking opportunity
Stage in drought cycle: Leading into drought	
Objective: What do you remember about this lead in to drought period?	
<p>Well government is normally reactive, so I'll park that to the side. When talking to farmers, they know when they're going into drought.</p> <p>We asked farmers, 'What are your early indicators of going into that phase?'. Seasonal rainfall obviously determines a lot. Big feedback from farmers is that BoM needs forecasts specific to growing times or growing seasons. The rain might happen at one end of the season, and miss the period that is needed to get a crop growing. Need to change that language, rather than just looking at it from a broader perspective and looking at the total amount of rain.</p> <p>Farmers know the next drought will happen, it's not so much a surprise, because it's cyclical.</p>	<ul style="list-style-type: none"> - Farmer awareness of drought - Information provision and access, tailored BoM data - Importance of strategic decision making,

<p>E.g. I've just invested in buying enough hay while the commodity price is good, knowing that the next dry time will come around. Farmers do know when it's coming into drier times, and they should be doing things to prepare. The better farmers are preparing now if they can, which comes back to capital. E.g. at the moment the price of water is the cheapest it's been, so irrigators here would have stocked up to try to carry enough over for next season or the season after.</p>	<p>stockpiling inputs</p>
<p>Reflective: What are the things you did/do well as things get drier (i.e. things your agency did in anticipation or to respond)?</p>	
<p>From an NRRR perspective: drought is slightly different, but we are focused on the natural hazard and disaster area. Our focus is: how do we better prepare people for when disasters happen? From a cost lens, we spend 97% on recovering from disasters, 3% on being resilient. That's been proven through research looking at the actual costs of disasters. That's why our agency has got a big program coming out, Preparing Australia, so there's a whole lot of funding that's being tipped into that bracket now going forward.</p> <p>Historically, drought policy was sitting under DAWE. In 2018 it was brought out of DAWE and put into the Drought and Flood Agency. Then after the bushfire Royal Commission, it was said that because of the amount of different disasters that were going on, we need to look at this more strategically. Caused the birth of our agency. Drought policy and our policy team has gone back into DAWE, however, we do engagement about drought and situation awareness and we report back to them every month. So right now there's a lot of work going on in drought policy, drought program review. We're feeding into that review with feedback on the ground from people all across Australia and different industries. So that will have an impact when the next drought comes around.</p>	<ul style="list-style-type: none"> - Importance of reviewing drought/disaster policy - Importance of developing targeted policy - Importance of stakeholder engagement
<p>Interpretive: Would exposure to new ideas or different networks help at this time</p>	
<p>Yes. An innovative idea that I thought was really positive: one of my colleagues in NSW put together a massive comedy festival, got some funding for it. I attended it. It was a free event, providers were there softly in the background with different resources available. Free BBQ, people could bring their own alcohol as long as they could get home safely. Overwhelmingly the feedback was there needs to be more of these events, it's not in your face, you can catch up with everyone, have a laugh and come together, this is much better than any mental health event. Honestly when I went there, experienced it, and we got that feedback I thought that was just amazing. Part of the national program that was put out was drought outreach events. Covid has really hindered them. We're doing some next year. They won't be called drought events though. Rotary will be there plus other providers. For all the other states that don't have Covid outbreaks, it's been amazing that some of the people that turn up to these events still don't know about the support services that are available to them during drought and after drought. So it's an opportunity to provide what they need, and let them know what's available to them.</p>	<ul style="list-style-type: none"> - Benefit of community/social events on farmer mental health
<p>Decisional: What would help you avoid or reduce those struggles leading into future droughts?</p>	

<p>I'll talk about what I've heard from farmers. When things get tight, it's obviously the cashflow in that's the issue. The Australian Government has RIC (Regional Investment Corporation) loans. The feedback was that it was terrible, especially around interest.</p> <p>The thing that I hear the most: farmers need cashflow and they don't have it. So they're suggesting things like: if government fees, water fees etc. can somehow be pushed out. If they didn't have to pay those immediately during drought times. But then when times are good, give them the ability to pay more. In farming, when cashflow is good it's really good. It's a compounding issue: if farmers don't pay their fees, various debt management stuff is put on them during that tough time. This can aggravate those tough times.</p>	<ul style="list-style-type: none"> - Access to resources, financial - Flexibility around paying government services, to improve cashflow
Stage in drought cycle: Non-drought period	
Objective: What data and information do you use now?	
<p>We need to fix a lot in the data and information space. The data a lot of farmers use to make decisions is BoM data. Weather stations and moisture probes are much more commonly used in decision making now.</p>	<ul style="list-style-type: none"> - Improve access to monitoring data/information
Reflective:	
No questions or response recorded.	- N/A
Interpretive: What data or information is needed?	
<p>We need to fix a lot in the data and information space.</p> <p>A project could fall out of this: the implementation of using data to its fullest advantage. That is definitely a gap. E.g. I have an iPhone and can do bits on it, but there's so much more I could access on my phone. Need to learn how to interpret that available data, build my capability, and understand how to really use it.</p> <p>Even understanding what some of the BoM stuff does. E.g. QLD did a good online event on that which I attended. I learnt more about what BoM means when they put certain information out.</p> <p>Farmers also need more information around commodity prices, fertiliser inputs, etc. Business acumen data so that they can make sensible management decisions, e.g. when to put hay underground, when to sell, etc. Some farmers I've spoken to have hired someone to do a financial analysis of their business, and have developed really strong business plans. That's something that is needed.</p> <p>There are Future Drought Fund programs related to that, happening through Ag Vic. The problem is, even people like me don't know that these programs are available, and are a free service. Information about these programs need to be widely accessible. I get information from Ag Vic, then spread the word to farmers.</p>	<ul style="list-style-type: none"> - Improve access to monitoring data/information - Capacity building in accessing/using data - Information provision access, input/output market conditions - Capacity building, business management - Limited knowledge of programs/services -
Decisional:	
No questions or responses recorded.	- N/A
Final questions	
What should the drought hub be working on?	

<p>Work on improving the definition of drought, and including drought as a disaster when it comes to financial assistance. E.g. I was in East Gippsland, dealing with farmers that have had 3 years of drought and then severe bushfires. They got a heap of money from bushfire assistance programs, because it's defined as a disaster. Whereas drought is not a disaster, so they got no assistance for the 3 years of drought.</p> <p>In 1979 drought was removed as a natural disaster, which meant that it no longer triggered all the money that you would get if you experienced a disaster. In East Gippsland I spoke to two neighbours who had both been experiencing drought, then one of their properties was affected by a bushfire, which meant they got a lot of money and assistance, whereas the other landholder got nothing. That's something I feel is a missing dialogue. Another thing the drought hub should work on is creating widespread awareness of the programs available to people in the agricultural industry. I live, work and breathe this space and even I don't understand all the programs that are happening. There should be a place that farmers can go to easily access all this information, rather than having to do in-depth research to find it.</p> <p>Trust issue between landholders and the government, especially in the Goulburn-Murray Irrigation District. When we asked farmers where they go to get their information, they said it was mainly through industry groups, or through farmers they have connections with. A lot of them still did use email where they could. But we found that verbal and face to face communication was the preferred way for most farmers to interpret what was being delivered electronically.</p>	<ul style="list-style-type: none"> - Improve understanding of drought, among government - Improving awareness of information, programs, and support - Build trust between farmers and government - Preference for face-to-face communication
<p>Other comments for this stakeholder to aid follow-up</p>	
<p>Yes I'm interested in being part of project development group sessions. Put me down, I'll either turn up as a community member or a small cattle business owner. I can bring a lot of broad industry contacts in to try and assist. In my personal time I am a Meat & Livestock Australia ambassador so that brings that industry lens in.</p>	

6.8 Summary of consultation: Farm services provider, Mid-age (36-55), Predominantly Female

Node: Riverine Plains

<p>Stage in drought cycle: In drought</p>	
<p>Objective: What are the main impacts on your business?</p>	
<p>Good opportunity to clean out and enlarge dams. Good opportunity to access funding from grants to upgrade infrastructure and there were significant opportunities to do so after the 2018 drought.</p>	<ul style="list-style-type: none"> - Opportunity to upgrade/maintain infrastructure
<p>Reflective: What were the services or support you reckon helped your clients the most?</p>	
<p>Having fodder on hand helped the most to get through the drought. Thought about how to access water better by a pump to a nearby irrigation channel, how could domestic schemes be instigated.</p>	<ul style="list-style-type: none"> - Maintaining input reserves, feed - Improving infrastructure

Interpretive: What data, information or resources would help you with drought affected clients that isn't available via your business?	
More work load meant that there wasn't time to worry too much about the drought, and it wasn't until after that that they felt the consequences.	- Increased workload
Decisional: What (if anything) would help you to be better prepared to provide advice in the next drought?	
Lucky to have support but allowed the time to think about what can be done infrastructure-wise and planning-wise for the next drought. Easier to think about when it's happening as opposed to after. Allowing equal access to water that is available.	- Strategic decision making - Access to inputs, water
Stage in drought cycle: Recovery after drought	
Objective: What were the first things you advised your clients?	
Drought generally also means fires, so people start to think about fires immediately after droughts. People generally take actions after drought. People are probably less risk-averse after drought because they are keen to get things going again. The things that would be most useful for farms would be aimed at young farmers giving them business skills. Support to continue when the drought breaks because that is where the capacity to make changes is.	- Compounding risks, fire - Less risk averse, desire to 'return to normal' - Capacity building, business management
Reflective: In hindsight was there anything else you could have advised that would have helped make this recovery quicker?	
Had a lot of family around to talk through the drought and how it impacts them. Recovery takes longer to occur if a farm has been hit hard by a drought. They were lucky that they weathered the storm pretty well. If you have family and friends around, the support is a lot quicker.	- Benefit of friends and family support
Interpretive: Are you in a position to provide this advice now?	
No response recorded.	- N/A
Decisional: If not, what would help ensure you ensure you are equipped before the next drought?	
Business acumen for young people. Using the time between droughts to address knowledge gaps.	- Capacity building, business management
Stage in drought cycle: Leading into drought	
Objective: What questions or advice do you remember your clients asking for, or you giving, in this period?	
Thinking about the choices in preparing for drought. Most people have more confidence now in dealing with drought because it does happen relatively often.	- Benefit of experience
Reflective: What worked best and what didn't have much impact?	
No response recorded.	- N/A
Interpretive:	
No questions or responses recorded.	- N/A
Decisional:	
No questions or responses recorded.	- N/A
Stage in drought cycle: No-drought period	

Objective: What have you advised your clients in the most recent good period to prepare for the next drought?	
Yes, always looking for ideas. Hasn't been using data, and there is mixed use of data.	<ul style="list-style-type: none"> - Increase use of data - Consider innovating
Reflective:	
No questions or responses recorded.	- N/A
Interpretive:	
No questions or responses recorded.	- N/A
Decisional:	
No questions or responses recorded.	- N/A
Final questions	
What should the drought hub be working on?	
Young or new farmers' business acumen.	<ul style="list-style-type: none"> - Capacity building in business management for young farmers
Other comments for this stakeholder to aid follow-up	
<p>The report from engagement could be provided to Mel to inform potential investment to the ARLP Drought program.</p> <p>Young Farmers Riverine Plains event.</p> <p>Keen to work together to invest in projects, especially the ARLP Drought Leadership program.</p>	<ul style="list-style-type: none"> - Providing hub report to other organisations, Riverine Plains, Australian Rural Leadership Program

6.9 *Summary of consultation: Farm services provider, Mid-age (36-55), Predominantly Male*
Node: Riverine Plains

Stage in drought cycle: In drought	
Objective: What were the main products or advice your clients were seeking?	
<p>Generally the main one for our role was decisions around letting crops go through to harvest, and understanding the potential opportunities for things like hay. Having discussions around what the yield potentials were. And discussions around any underlying things in those droughts too, e.g. there was a series of frosts and a lot of frost damage during those drought periods as well.</p> <p>Was also about trying to manage some expectations, in terms of what their oncome might look like for the year, and see what some of the best opportunities were to use what potential they had in this area at the time. That was a pretty big one really.</p>	<ul style="list-style-type: none"> - Decision making, grain versus hay - Estimating yield potential - Compounding weather/climate threats - Manage expectations - Understand and exploit opportunities
Objective: What are the main impacts on your business?	

<p>From the agronomy side of things, front of mind is always managing those relationships and being there for those people, being on the end of the phone. When those pressures come on and scenarios aren't panning out well for businesses, I'm someone who likes to get in the car and visit people, or get on the phone when things go quiet. I try to create some forward decision making and be proactive with clients, and start having some of those difficult conversations.</p> <p>It takes a lot of mental energy, it's very draining during drought years just dealing with the negativity, anxiety, and stressors in those situations. In 20 years in this role here in Yarrawonga I've come across those situations before, so I can lean on my experience to help people in those situations. It's not necessarily always just drought, it can also be some of the other issues which come into play during drought (e.g. frosts) that just push things even harder unfortunately.</p> <p>So our business as usual is providing that advice to clients regardless, but there is an element of extra support that you have to provide when there's something hard going on for them, whether it's drought, flood, frost, etc. It's not a written part of the job description, but it's important to understand what those people need at that time.</p>	<ul style="list-style-type: none"> - Providing support - Proactive decision making - Difficult on mental health - Value of experience - Compounding weather/climate threats - Providing frank advice - Providing support
<p>Reflective: What were the services or support you reckon helped your clients the most?</p>	
<p>The challenge with supporting people during a drought, is that it comes back to the different personalities and skillset of each client, and how they each deal with drought. So, The most important thing was to sit there, listen, ask a few questions, and have some open discussions. Taking the time to slow down and make sure you've got the awareness of what suits each individual.</p> <p>E.g. some clients are set up for making hay or other salvage options in drought, and are very good at getting things done and understanding the process. Whereas for other farmers it's extremely daunting because they're looking at huge costs of contractors, and salvaging isn't in their skillset at all. So there's a fair difference in drought years that separates continuous cropping and 100% cropping properties, versus the mixed farmers who have more resilience and flexibility around what they can do. Mixed farmers have generally got a better understanding and acceptance of what's being imposed on them by the season. The 100% cropping farmers tend to go into workshop mode and just find other things to do, which may not lead to the best outcomes for them.</p> <p>In terms of discussions those expectations of drought years, fortunately in this area we generally have got something to work with. Farmers here are fortunate enough to at least have a bit of crop or straw that they can utilise. Can still sometimes get their header out during a drought year, even if it might only be a few hundred kgs per hectare. Mentally rewarding to be able to do the harvesting process, even just going through the motions of finishing off the season. It helps them to keep a bit of positivity up, because they are still actually achieving something. Lucky in our here to have that little bit more robust climate, versus the Mallee or northern NSW where a drought really is just dust and dirt and no water. Big</p>	<ul style="list-style-type: none"> - Providing personalised support and advice - Role of farmer capacity for different strategies - Resilience of mixed farming systems - Using work to avoid larger issues - Mental health, benefit of harvesting - Regional climate benefits when in drought

difference. Farmers in this region can still make a small profit in a drought year.	
Interpretive:	
No questions or responses recorded.	- N/A
Decisional: What (if anything) would help you to be better prepared to provide advice in the next drought?	
<p>I have an academic background and scientific training. I find my skillset lacking in a greater awareness of people skills and personal relationship skills, observations and discussions. That training is something our industry misses out on, we're not quite up to speed in our capacity and skillsets as we should be. Important when it comes to having those very difficult conversations with people.</p> <p>So we need some sort of training in understanding resilience and supporting relationships in those situations. Formal, theoretical knowledge and tools that you can roll out. Concentrating on some of those key communication processes to handle those difficult conversations well. Which should give you the confidence to go out and engage on that deeper level. Rather than just discussing the hay or grain, or other more "superficial" challenges.</p> <p>You stand out there in the shed and talk to the husband, while the wife and kids - who are under just as much stress - are left inside. Having the awareness to involve the whole family or entire business unit in those conversations is important. It's what we tend to brush off as an industry too. E.g. you just keep going back to the main stakeholder you've got that relationship with in the business, rather than engaging some other important factors, which could actually get that person to move forward or do something constructive.</p>	<ul style="list-style-type: none"> - Lack of capacity building for advisors, interpersonal skills - Role of communication theory - Benefit of interpersonal skills in addressing key issues - Impact of drought on family mental health - Benefit of interpersonal skills in supporting farming families
Stage in drought cycle: Recovery after drought	
Objective: What were the first things you advised your clients?	
<p>For a lot of farmers, they're isolated and they've just been through such a challenging time, so it's important to take a break and celebrate some of those little victories. To have that sense of relief even for a short time. But generally you're getting back to business as usual, and trying to concentrate on some of the opportunities they might have with that moisture e.g., sowing early Summer grazing crops. Trying to identify some opportunities for them that are a little bit outside of a normal cycle in a season. When a drought breaks the challenge is at least being prepared to have something in place before that comes, rather than just reacting when it happens. There can be a bit of a stress if they're not organised and haven't got the fertiliser, seed or whatever they need.</p> <p>So straight after drought breaks it's about getting them back on track and doing things that can lead them out of that scenario they've been in. Going back into activity mode.</p> <p>Short term decisions (e.g. sowing a couple of paddocks for feed, or cleaning out a few dams) versus long term. The challenge for agronomists</p>	<ul style="list-style-type: none"> - Importance of positivity on mental health - Returning to business as usual - Innovate to take advantage of opportunities - Preparation for end of drought, stockpiling inputs - Role of short-term and long-term tasks

<p>is putting some of those longer term issues in front of them, e.g., resistance or disease management.</p>	<ul style="list-style-type: none"> - Role of advisory services in addressing long-term issues
<p>Reflective: In hindsight was there anything else you could have advised that would have helped make this recovery quicker?</p>	
<p>A challenge around our area now is scale, and the price of land. It has challenged things so much in terms of the expectations. Coming out of a drought, a lot of farmers focus on what will be best for short-term cashflow, and on the opportunities for getting something as profitable as possible within the next 12-18 months. That's always the biggest focus, trying to get things back on track and make as much short-term money as they can. Rather than having trust in their sequence and system. Because the system has actually factored in things like stubble management, summer weed spraying, etc. to try to buffer the effects of a drought, frost, late break, all those sorts of things. The challenge is trying to keep them on track, having confidence in the system, rather than just putting it all on red and rolling the dice, playing. It's a huge challenge to guide them away from taking that short-term gamble.</p>	<ul style="list-style-type: none"> - Price of land a barrier to scale - Diverting from agronomic strategies - Pressure to recover debt - Importance of farming strategy - Risk management, farming strategy
<p>Interpretive:</p>	
<p>No questions or responses recorded.</p>	<ul style="list-style-type: none"> - N/A
<p>Decisional: If not, what would help ensure you ensure you are equipped before the next drought?</p>	
<p>Mixed farmers with livestock in their system have more resilience and robustness, due to the diversity of their system. Whereas croppers with the standard canola-wheat-wheat cycle (which is still touted as one of the most profitable things to do), are the ones that comes unstuck the quickest. They have the most uncertainty and pressure on them, because they're locked in to a less diverse system. I don't think they have enough understanding of the farm business management economics behind those systems. What the returns and risks are in your canola-wheat-wheat system. They don't know enough about the figures behind that. Training in business acumen and economics knowledge would help farmers. So they can weigh up the options effectively, not just blindly go into another business-as-usual cycle. This knowledge isn't in my skillset currently either. Knowing the economic implications of their decisions. But the more of those tools I have, I could actually have those conversations with some farmers and give them better direction for their decision making. I'd love to see farmers have the tools and capacities in those areas, rather than just do what they've always done. Agronomists need an awareness of the financial consequences of the advice we're giving. Just from a basic gross margin point of view, and what options or advice you prepare for your clients as a result of that. I'd also like to see farmers more engaged with other service providers in that financial/economic space, to better understand the consequences of the system over a number of years. E.g. what does the introduction of fava</p>	<ul style="list-style-type: none"> - Resilience of mixed farming systems - Resilience in diverse cropping systems - Weakness of 'standard' (less diverse) cropping systems - Lack of business management skills - Importance of informed decision making - Importance of business management skills to farmers - Importance of business management

<p>beans in your rotation mean? Could it potentially result in saving X amount of kgs of urea across year 2 and 3? Or it might conserve more moisture for a following canola crop.</p> <p>E.g. The research by Riverine Plains showing that growing canola or even wheat after a fava bean rotation, will yield ½ tonne better than the standard canola-wheat-wheat scenario. That’s the sort of information I’d like to have. Talking yield and production gains, that’s probably where agronomists need to sit, rather than having more of those strict financial or economic discussions.</p> <p>A good potential project: if we could measure the impact of the advice that farmers get, so agronomic versus someone coming in and giving them financial advice. Which is working, and how do we fine-tune these providers so the farmers get increased resilience?</p>	<p>skills to agronomists</p> <ul style="list-style-type: none"> - Value of collaborative advice - importance of integrating range of advice (e.g., agronomic, financial) - Role of farming system groups in providing collaborative advice
<p>Stage in drought cycle: Leading into drought</p>	
<p>Objective: What questions or advice do you remember your clients asking for, or you giving, in this period?</p>	
<p>That’s a difficult discussion, because I suppose they’re being presented with news and a potential forecast of where things might be headed. And with a lot of clients, things go quiet. Phones go quiet. They stop planning, they back off a little bit once they have got that news, or there’s rumours circulating about drought starting again.</p>	<ul style="list-style-type: none"> - Lack of engagement (of advisors) leading into drought
<p>Reflective:</p>	
<p>No questions or responses recorded.</p>	<ul style="list-style-type: none"> - N/A
<p>Interpretive: What were the areas of advice that you found hard or struggled with during this time?</p>	
<p>I find that a lot of growers go into that denial phase, a decision paralysis phase. Sitting there with their eyes wide open, waiting for the rain to come. A lot of stuff gets left to the last minute, so generally their preparation in those scenarios is less than ideal, because they put everything off until it does rain.</p> <p>Some farmers will start sowing, or start dry-sowing. The bigger growers are probably a bit more robust and able to make a commitment, just through the scale of their program. I find that once they get going in the mindset of ‘activity mode’, the issue is that the planning gets ignored. They focus on creating activities for themselves, whether it’s right or wrong, just to go through the motions or feel like they’re doing something. It increases their morale. Once they start to sow, they’re a lot more positive about things just because they’ve taken that action, rather than choosing not to sow (which may actually be the right option). Farmers still go for very much activities-based answers in those situations, rather than a discussion or a business principle-based answer. Don’t really consider questions such as: what can we afford to spend now, where do we go, because the outlook is not that good.</p>	<ul style="list-style-type: none"> - Hesitation in decision making - Using work to avoid larger issues - Positive role of activity on mental health - Lack of financial consideration
<p>Decisional: What would help you avoid or reduce those struggles leading into future droughts?</p>	

<p>I think it's about having those frank conversations around what they really need to do (or not do). I need to understand what I can do to help them, but they've got to take a step back and tell me what they need. Rather than me coming in and saying, 'OK you've got to get this and this done, because it's April and we need to do these things done otherwise we might miss out on some yield potential'.</p> <p>We don't spend nearly enough time in that space. I'm guilty of it myself, I go into activity mode, I do their plans and get all the materials packed up in the shop ready to go. Rather than rushing to pull the trigger, we should be asking, 'Is this actually what you need to be doing?'.</p> <p>More of those conversations should be based around financial, farm management, and economics-based advice. Agronomists don't know where some of these farmers are financially, e.g. their interest rates. There's a big gap between what I know and what the banks are telling them. It's a huge hurdle to actually doing the right thing by the client and their business. It's a worry.</p> <p>The uncertain period is a really difficult time for agronomists to advise. Farmers are disengaging, or stuck in activity mode. It's a challenging time for agronomists to support farmers and get them moving in the right direction. To help with this, I'd like more skills and capacity in the financial and mental health areas, to understand what are the best questions I should be asking farmers to help manage that paralysis, and also help them to capitalise on the right advice in a timely manner if seasonal conditions did change. Always being up against mother nature is a real challenge, not knowing when/if it will rain.</p> <p>And being able to have more open conversations with farmers about how they're coping, and how they're going to deal with this, rather than just continuing on as we always have. Helping to recognise that drought is an opportunity for change. Rather than letting them do what they've always done, because 'that's the way Dad did it', and they've convinced themselves it's still working.</p>	<ul style="list-style-type: none"> - Value of collaborative decision making - Tendency to act, rather than plan - Importance of (financial) context when providing advice - Holistic approach to advisory services - Need for capacity building in financial and mental health services - Role of addressing financial concern on positive farming outcomes - Role of addressing mental health concerns on positive farming outcomes - Drought as opportunity for change - Importance of innovation
<p>Stage in drought cycle: Non-drought period</p>	
<p>Objective: What have you advised your clients in the most recent good period to prepare for the next drought?</p>	
<p>The most important thing in the good times is capitalising on every millimetre of potential rainfall, every extra couple of hundred kilograms of yield. Really concentrate on maximising yield in those good seasons. My advice tends to be tailored around trying to make the most of the good times, because you never know what's around the corner. E.g. saying, 'What is the return on investment this year with putting on that extra hundred kgs of urea? What might that mean for increased yield potential?' I think the biggest issue is missing the boat, e.g. not putting on enough nitrogen. Not capitalising on those potentials when the opportunities arise.</p>	<ul style="list-style-type: none"> - Maximising yield potential, water use efficiency - Capitalising on good seasons - Maximising yield potential, plant nutrition

<p>Farmers might not be geared up to get all the necessary work done in a timely fashion in those better seasons. But in years like this year (2021) I'd be advising some farmers that rather than getting a contractor in they should probably invest in that extra boom spray or header, but being cautious not to overcapitalise in that machinery area. Basically it's really focusing on opportunities during those good years.</p> <p>And focusing on the positives. This year I've heard farmers say, 'Oh, I've got nothing to complain about'. That's so good to hear them say that and be in that mindset. I like to give them reassurance about that positive mindset. And keeping things in perspective, e.g. this year a farmer said that their canola was only going 2.8 tonnes/ha. Only 2.8? That's your highest yield average in 20 years. My advice during good times is to enjoy it. And also now is the time to make infrastructure or machinery investments.</p>	<ul style="list-style-type: none"> - Biggest issue is not capitalising on good seasons - Importance of preparation and timeliness - Asset management, investing in cost saving assets - Careful not to overcapitalise - Value of positivity - Invest in assets, machinery, infrastructure
<p>Reflective:</p>	
<p>No questions or responses recorded.</p>	<p>- N/A</p>
<p>Interpretive:</p>	
<p>No questions or responses recorded.</p>	<p>- N/A</p>
<p>Decisional:</p>	
<p>1. If so, what would help you to provide that advice as well?</p>	
<p>Within reason I also try to advise farmers act a bit conservatively of well. Just to be a bit wary of not pushing things too hard during good times, and keeping a bit of a lid on expectations there. This year is a classic example to be honest. Adding that little comment at the end of some of those conversations saying, 'Well we haven't actually got that harvest off yet, let's not go counting everything or ordering all the new gear'. Still being aware of what might be coming in the following months which could upset the apple cart a bit. Paying attention to where we're at with the influence of Mother Nature, and being wary. E.g. a big threat for grain growers in this area is frost.</p> <p>So for me personally I probably need to reel back on optimism and remember to keep that mindset of conservative advice in the back of my mind. And keep a few options in front of you rather than going too hard.</p>	<ul style="list-style-type: none"> - Managing expectations and investment decisions - Unpredictability of climate/weather
<p>Final questions</p>	
<p>What should the drought hub be working on?</p>	
<p>Rather than framing projects as drought management, I think it should be framed as opportunities for driving change. Change to farm management practice will be the key in terms of giving us resilience.</p> <p>To get that change adopted, get it over the line, we need the key growers and the community leaders, the ones that a lot of people look up to. They play a big role in driving change. Huge value in the networks like Riverine Plains for example where you've got growers teaching growers. Let growers have their conversations and build their skillsets with each other. That's a really important part of the adoption of change. The challenge is</p>	<ul style="list-style-type: none"> - Reframing projects, opportunity for change rather than drought management - Resilience through

<p>capturing the outliers, who don't engage or fit in as much. Tend to be late adopters and resistant to change.</p> <p>Useful projects to be working on: figuring out the psychology of decision making for farmers, what sits behind that, and what helps farmers decide to do things differently.</p> <p>We need to keep engaging with the well-respected, leading growers, croppers and mixed farmers. Their skillsets are really valuable for raising the bar for the district. They're the ones I'm passionate about seeing get the support as well. They're the ones that are doing the presentations and giving back so much to their peers, but what's in it for them? We've got to keep them stimulated, using their skillsets and experience to lift some of the others up with them. They are leaders, but have they necessarily developed skills in leadership or things like that? And can we use that to drive change?</p>	<p>innovation/change</p> <ul style="list-style-type: none"> - Role of (community, farmers) leaders in adopting change - Importance of peer-to-peer knowledge sharing - Challenge reaching disengaged farmers - Understanding psychology of farmers - Value of leading farmers - Supporting leading farmers to fill that role
<p>Other comments for this stakeholder to aid follow-up</p>	
<p>Yes. I'm pretty passionate about this, and I would be keen to follow it up.</p>	

*6.10 Summary of consultation: Farmer, Mid-age (36-55), Predominantly Female
Node: Riverine Plains*

<p>Stage in drought cycle: In drought</p>	
<p>Objective: What impact did the last drought have on your farming business?</p>	
<p>I wasn't farming during the Millennium Drought, but my family were. It had a very significant impact on them, and also it impacted my thinking about subsequently being a farmer 10 years later. They had Merino sheep and beef cattle, and they were selling in to mainstream markets, and it was really tight. To have such a sustained period of dry was super challenging. So I thought, 'I'm not ever going to put myself in that situation'. When I started farming, I wanted to really think through what I wanted to do, and what it would look like to do things differently. The Millennium Drought stretched over such a long period of time, I could see it wearing people down. Structural things in agriculture make us more vulnerable to drought. E.g. being at the whim of commodity prices. All those things converge to make us less resilient.</p> <p>I started the Open Food Network, and was looking at alternative distribution options and alternative markets for farmers so they could dictate prices more. As a farmer, I wanted to be able to sell my food directly to consumers or through alternative markets for a high price, so I</p>	<ul style="list-style-type: none"> - Value of experience - Limitations of commodity market - Benefit of alternative markets, direct to consumer

<p>don't have to run as many animals, run myself into the ground and put myself at risk.</p> <p>I started farming myself on leased land from my mum in 2017. I've also had alternative income - the Open Food Network being the main endeavour. Since 2017 I've built up a flock of Aussie Whites, but I started with only a handful of sheep. So I was building up and breeding up my flock. But in 2018 I wasn't operating at a scale that meant I had to change anything much as a result of the drought.</p>	
Objective: Who helped?	
No response recorded.	- N/A
Reflective: How did the last drought impact you personally? (struggles?)	
The Millennium Drought was very stressful on my family, but I wasn't living at home then. So I was impacted by them being extremely stressed, and relationship breakdown and all that sort of stuff. It impacted me by making me think, 'well what am I going to do systemically about this?'	<ul style="list-style-type: none"> - Mental health, family - Promote strategic decision making
Reflective: Who or what helped you the most during this time?	
Having insight from my parents on their experience during the Millennium Drought helped my thinking.	- N/A
Interpretive: What gaps in responses or support need to be addressed?	
Hard to recall, the Millennium Drought was a long time ago now. I would say...no one thought it would keep going on and on and on like that, so it was like death by a thousand cuts. And the government had band-aid kind of things...my parents got funding for various bits and pieces around the farm.	<ul style="list-style-type: none"> - Uncertainty around length of drought - Public funding, financial support
Decisional: What new ideas or innovation would help in the future?	
<p>Having buffer, e.g. not being forced to sell animals. I think that's the main thing. You have to sell animals to reduce your risk, but then if you're selling into low prices you've got no control over that. So I solidified my market and now I'm selling directly to customers. So we've got subscribers and we know that we can move the sheep. So I can just always say, ahead of time, 'I'm going to run out of grass, I'm going to sell animals, I'm going to get a certain price'. Rather than managing these multiple converging risks of having low prices when I'm trying to manage the risk. And now that I've got a lot more sheep I'm needing a scaled solution to that.</p> <p>Selecting sheep over cattle. Sheep are more adaptable. You can breed sheep more quickly, and be more flexible. They don't drink as much water, they're more resilient in drier contexts. I chose a system that was in my mind more drought-resilient. Including breed selection. Aussie Whites are very hardy, they produce meat on grass without lots of supplementary feed.</p> <p>Also diversifying my income to be more drought-proof, having off-site income through creating the Open Food Network (OFN). It has taken a long time for OFN to be profitable. But once it actually was paying us, that's when I felt more confident to go into farming, with that buffer. We moved to the country and had that money behind us. Knowing I had the earning capacity to bring in money when I needed to, off-site, and also</p>	<ul style="list-style-type: none"> - Risk management - Benefit of alternative market, direct to consumer - Limitations of alternative market, scaling up - Benefit of sheep, versatility/resilience - Variety selection, drought-resilience - Benefit of stable market

<p>have capital, is pretty important for starting farming. We're looking at doing other things on the farm, like having accommodation for visitors. That ties into the marketing of our product. We want to have awesome visitor experiences at the farm, but it's not to make money out of that visitor experience, it's about being able to sell the meat to the people that come to the farm. But that's an alternative income stream.</p> <p>I wouldn't say I had business acumen, maybe just a strong sense that I needed a buffer.</p> <p>Land prices are pretty important. I don't own the land that I'm farming, I'm leasing, but I have another house that I own that I could borrow against, in case I needed working capital. Most farmers have that because they own the land. I think they take that for granted, being able to get cheap borrowing money, and they can get a bit lazy sometimes. In Warrenbayne my mum recently sold land for \$6000/acre. Five years ago it was worth \$2000/acre. Farmers that already own land are sitting on this massive amount of equity. But for people who want to get into farming, it's almost impossible.</p>	<ul style="list-style-type: none"> - Alternative sources of income - Business management, flexibility - Land prices, barrier to entry
<p>Stage in drought cycle: Recovering after drought</p>	
<p>Objective: What unexpected issues did you encounter?</p>	
<p>What I observed in my family when they went through the recovery phase: Not long after the Millennium Drought, my parents ended up divorcing (2015), but the seeds of it had started much earlier. But I think going through that drought, and then getting out of it, they realised the situation wasn't sustainable more broadly. They experienced a kind of fundamental rethinking. I think with my parents it was a necessary thing though, they needed to get divorced. For them it was sort of more of a 're-set, re-think', after drought breaks and you get your head up.</p>	<ul style="list-style-type: none"> - Impact on familial relationships
<p>Reflective: Was there anything else that would have helped make this recovery smoother or quicker?</p>	
<p>In my view of the industry, what makes recovery smoother and quicker for farmers: Having a longer term farm plan and vision, so you've already built in how you're going to deal with it, and what it means to get back on track. So when drought breaks you get back to your plan. It also makes recovery smoother when everything else aligns, e.g. when prices are good. It depends what the cumulative context is that's going on around you. So if everything else is OK, recovery is smoother. E.g. graziers sell stock during drought, then when times are good and you want to buy back into stock, they have to decide: do you take the long road of breeding them back up, or buy into stock? If prices are really high it's almost impossible to get into stock. But that's about the planets aligning kind of thing. In terms of government-funded things, I think the Rural Financial Counsellors, particularly ones that are really embedded, and have been around for a long time, and understand the context and relationships and everything, they're pretty vital. So actually having proper funding so these</p>	<ul style="list-style-type: none"> - Benefit of strategic decision making - Impact on asset prices, livestock - Benefit of support services, financial counselling - Ensuring funding for support services

<p>counsellors are not thinking at the end of each year, 'where's my funding going to come from?'. That's pretty crucial. Important to retain those people in the community who have already built up relationships so that farmers can feel comfortable coming to them. Rather than being just a different Joe Blow each funding cycle.</p>	
<p>Interpretive: What would you do again or do differently?</p>	
<p>To be prepared for the next drought, we monitor the grass, and know when we need to sell stock ahead of time, and not be forced. That's the main thing. And I've got a really low input, low cost system as well. I do regenerative farming, so I'm not putting heaps of money on in terms of inputs, fertilisers, etc. So another part of my strategy is low-cost production, but selling premium product. And not holding off on selling early.</p> <p>Some farmers struggle to sell their stock, even though they know they'll have to. I've heard from an ag trainer that it can often take 3 months to make a decision like that in your mind, and by then it's too late because you're going to crash the system. So you have to be ready to sell.</p> <p>Unless prices are very good on the normal market, I have my own market, where I'm just selling the meat. So I've got alternatives if traditional market prices aren't good.</p>	<ul style="list-style-type: none"> - Importance of monitoring inputs, fodder - Benefit of low-cost production, regenerative agriculture - Barriers to timely decision making
<p>Decisional: What would help ensure things are in place before the next drought?</p>	
<p>I feel a bit silly because we've had amazing seasons and amazing prices these past two years, meanwhile I'm working hard to build up this alternative market that's more long-term and reliable. But at the moment I could just sell at the market and clear the same amount of money. So I'm building a longer term strategy, but the last couple of years have been unbelievable.</p> <p>I think people should be using these good seasons, and should be working on putting up that buffer for the next drought.</p>	<ul style="list-style-type: none"> - Business management, developing long term market strategy
<p>Stage in drought cycle: Leading into drought</p>	
<p>Objective: What plans were in place for this period?</p>	
<p>I'm working on setting up the infrastructure for the farm, I'm doing physical things in preparation for drought. We've just put in massive diversion banks to catch lots more water, particularly during the higher summer rainfall that we get now. The banks divert more water into dams, and that's reticulated out to troughs. And every year I'm doing tree establishment for shelter in paddocks. We want a lot more trees for shade. Good project for government: fund protection for trees in paddocks, e.g. single trees, even non-natives. Usually NRM funding is just for native trees. But I'm wanting to plant oak trees for example, where the grass still grows underneath them, they're fodder trees, they're good shade. Shade and shelter for sheep. But it's quite expensive to fence off trees. Particularly if you've got cattle (I've got sheep so it's easier), but to guard single trees in paddocks is quite expensive, and it would be great if government had some money for that.</p> <p>In terms of stock containment, I don't think I'd ever get into that situation.</p>	<ul style="list-style-type: none"> - Farm management, investing in drought proofing infrastructure, water storage - Funding for tree planting

<p>I'd sell stock before that, and get right down just to core breeding stock. For me stock containment would be a last resort.</p>	
<p>Reflective: What were the things you did well as things got drier (i.e. did in anticipation or to respond)?</p>	
<p>I practise regenerative agriculture. I define regenerative ag as agriculture that builds measurable ecological function. E.g. building soil health, soil biodiversity, terrestrial biodiversity, those things can all be measured. It's a whole group of practices. In a grazing system, it involves managing the flock/herd as one, so you're not dividing livestock up into classes and managing specifically for each class.</p> <p>Also about building up a diverse native perennial pasture base. We don't put any inputs on, and we have long rest periods from grazing. You need smaller paddocks, with permanent or temporary fencing. We use temporary fencing as we try to get the paddocks smaller and smaller. That fencing is an infrastructure investment, and having water points in each small paddock. So you do high impact grazing for a short period of time, but then don't return to that paddock for over 3 months. This stimulates the natural nutrient cycling of the perennial grasses. Allows them to put their deep roots down, and then you come in and graze them at a specific point. Holds all of that carbon and root mass in the ground. Instead of putting on nitrogen, you rely on the biological nutrient cycling.</p> <p>In terms of revegetation: decades ago, my parents invested a lot in planting trees for shade and shelter on the farm. Now my main strategy is protecting existing paddock trees and planting new trees.</p> <p>Also fencing off dams, but because there's such long rest periods with regen grazing, the water quality of the dams is protected because they're only under pressure for a short period of time.</p>	<ul style="list-style-type: none"> - Benefit of regenerative agriculture - Natural resource management
<p>Interpretive: What networks or opportunities would help to share knowledge?</p>	
<p>There are a few networks I use to help prepare for drought. I try to just keep an ear to the ground, often by chatting to people at the rural supplies store. I'm not involved with my local Landcare group, but I am hooked in to the broader local Landcare Network (Gecko Clan).</p> <p>I used to be part of a Best Wool Best Lamb group in Euroa, but I've just been really busy this year so that's dropped off my agenda. But that was quite useful and good.</p> <p>Social media communities: I'll follow regenerative ag farming news, but I just haven't had time this year. In general I tend to not do social media if I can help it. But I follow groups like the Central Victoria Regenerative Farmers Group, and if I've got a specific question I go into the group and ask the question or search for the answer. Rather than following what's going on in the group all the time.</p>	<ul style="list-style-type: none"> - Benefit of community of practice, interest
<p>Decisional: What would help you avoid or reduce those struggles leading into future droughts?</p>	
<p>Regenerative agriculture. It's a completely different way of farming, so it requires changing the systems of the farm. Particularly infrastructure like water points and small paddocks.</p> <p>Regen ag drought-proofs the farm. Because you have this whole mindset of being able to see what's coming in terms of the grass that's in front of</p>	<ul style="list-style-type: none"> - Benefit of regenerative agriculture - Risk management,

<p>you, and not relying on supplementary feeding. So you know, 'OK I need to sell now', or 'I need to increase now'.</p> <p>So it drought-proofs you, but you're not getting the same total yield. You're not spending any money on inputs, so that increases your resilience because you've got a low-cost production model. I don't use any supplementary feed, fertiliser, but I'm not producing as much meat/animals in total. But if I sell that meat for a premium, over time I can make a resilient, profitable system, but it looks very different to conventional farming.</p> <p>A key part of our system is that we never have bare ground, always got strong perennial cover. So when we get those big rain events, we capture it all in the soil. Increased soil health and soil moisture means that we've got grass for longer. That builds environmental resilience, and has production benefits too.</p>	<p>low-cost production</p> <ul style="list-style-type: none"> - Benefit of alternative market, premium price - Water use efficiency, soil health
<p>Stage in drought cycle: Non-drought period</p>	
<p>Objective: What preparations are you making for the next drought now? (e.g % cash reserves?)</p>	
<p>We're definitely in an investment phase right now, e.g. with water infrastructure. We're putting in more fencing, and planting trees for shade and shelter in the smaller paddocks. When you're making smaller paddocks, you need to make sure that there's shade in all of them. Whereas in big paddocks there's usually a shade spot that animals can walk to. So those three main things, the water, fences and the trees, is something that I'm investing in during the good times, because I've got the money and capacity.</p>	<ul style="list-style-type: none"> - Farm management, investing in drought proofing infrastructure, water storage - Farm management, trees for animal welfare
<p>Objective: How do you evaluate your preparedness for the next drought?</p>	
<p>Once the investment in water, fences and trees is complete, we will be pretty well prepared for the next drought. But that doesn't always happen overnight, e.g. trees take a long time to establish. And it's a huge fencing program that we're undertaking, so it takes a significant amount of time.</p>	<ul style="list-style-type: none"> - Benefit of holistic farming
<p>Objective: Where are you looking for new ideas?</p>	
<p>I'm always open to new ideas. One thing in particular I'd like to learn more about is tree species. Not necessarily native species, but species that can act as fodder for feed gaps. E.g. I want to experiment with species like carob trees, because they drop really high protein seed pods right at the start of Autumn. And also species like poplars, that people used to use. If I'm not having a shed full of hay, how can I get fodder banks in the paddock trees?</p>	<ul style="list-style-type: none"> - Seeking innovation
<p>Reflective: What's changing in the good times compared to the past? Are some things harder/easier? Faster/slower? Shorter/longer?</p>	
<p>I think people are having more experience, more education around drought. I think generally people have all gone through it, e.g., they know that a drought can go on and on. People went through the Millennium Drought, and it changed them. Before that, I suppose there was the 1982</p>	<ul style="list-style-type: none"> - Benefit of experience - Uncertainty/anxiety around drought

drought which also changed people. But it's a different view now, like this could happen again anytime, that kind of thing.	
I=Interpretive questions (pick at least 1).	
No questions or responses recorded.	- N/A
D=Decisional questions (pick at least 1).	
No questions or responses recorded.	- N/A
Final questions	
What should the drought hub be working on?	
<p>Research into the climate resilience strategies within regenerative agriculture. We need R & D on farms of people doing these different regenerative ag things. And R & D focused on questions around resilience. Both profitability resilience and the resilience of the underlying environmental resources that you're depending on for your farm. Also I think that R & D should be focused on farmer-driven research questions. What are the questions that are emerging from farmers, particularly innovative farmers? Farmers that are trying out new things. And then getting the research money to actually put in place proper experiments on-farm, and partner with researchers who are doing the lit reviews and helping support that.</p> <p>So I would frame it not so much as putting money into regen ag (but you can do that as well), but I would primarily say: put money into farmer-driven research questions and research trials, and regen ag will come out through that. Because more and more farmers are trying new things in the regen space, and if that's what's happening region-wide then that should be supported alongside more mainstream stuff.</p> <p>Focus on where farmers are trying something new, and the research capability around them. Like have someone search through the literature, give them advice. Build their capacity around setting up an experiment so that the information they're getting from that is more useful for other farmers. Building capacity to get valid data from farm-based trials.</p>	<ul style="list-style-type: none"> - Information provision and access, alternative farming methods - Promote farmer-driven research - Conduct more on-farm research trials - Focus on innovative farming practices
Other comments for this stakeholder to aid follow-up	
Yes I'm happy to be part of the environment-focused group consultation, as long as it's later in January. (January is a busy month for me.)	- N/A

Appendix 2 The regional consultations - data collection and analysis

Node leaders conducted the consultations in their area.

To collect information in a consistent way across all nodes, standardised questions, related to the different phases of the drought cycle, were developed to explore individual's and organisation's experiences of the stages of drought and their opinions on where effort needs to be targeted to improve preparedness or responses to drought. The consultations were also an opportunity for participants to identify the areas they wanted to be part of co-developing or investing in with the hub.

The questions were built around a focussed conversation technique called ORID². This technique helps focus interviews or conversations toward the outcome of 'what should the hub be working on?'. It is a purposeful, directed conversation and the questions help the participant come to a clear conclusion or decision about needed future actions. Questions were designed for different types of stakeholders (e.g. farmers, advisers, industry bodies, etc) and for each stage of the drought cycle.

A written record of the responses to questions from each consultation were entered a data collection platform Qualtrics™. Using qualitative data analysis techniques, experiences in drought and ideas for enhancing drought resilience were coded and classified for each consultation and then grouped into common themes when compared with other responses within a node (to identify common themes at a node level-refer to individual node reports) and then across all nodes (this report).

² More about ORID: <https://extensionaus.com.au/extension-practice/the-orid-method-objective-reflective-interpretive-and-decisional/>