South Australian Drought Resilience Adoption and Innovation Hub

Annual MEL Report

Financial year: 2022-2023 (1 July 2022-30 June 2023)

Report due: 31 August 2023



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Summary

Outputs	
Output 1: Knowledge development and sharing (products developed from)	The SA Drought Hub has continued to develop the website which contains key information on the structure of the Hub, members and partners, key resources, news, information on projects, node locations, and staff contact details See: sadroughthub.com.au., The website is being updated regularly with resources being added as they are developed or become available. Hub staff have liaised with a range of stakeholders on drought resilience material that exists across a range of websites. This material has been compiled, reviewed and considered for inclusion in an online Drought Resilience resource-based website for use by producers and advisors. Once completed, this site will also house technical reports and fact sheets, podcasts and videos produced as part of Hub projects and initiatives as well as other FDF programs. There were 34 knowledge and information resources developed and shared by the Hub. These were received and viewed by more than 3000 people collectively.
Output 2: Outputs of innovation programs and opportunities	The gaps in existing drought resilience knowledge and practices identified through the initial Co-design process were across all aspects of drought resilience: Community, economic, management, agronomic and environmental. The initial SA Drought Hub co-design consultation process captured 991 ideas for building drought resilience and current knowledge gaps, and these were ordered into 10 themes with a report developed and available at: https://sadroughthub.com.au/resources Since the initial consultations the Hub has established Stakeholder Advisory Groups (SAGs) in each of the 5 nodes and at the Central Hub. Additionally, the Hub has engaged in ongoing discussion and consultation with the grains, livestock, wine, and horticultural industries in SA through State peak Industry bodies, RDCs, and industry funds to align Hub projects with relevant industry priorities as identified in industry blueprints and other strategic documents. The Hub has co-invested in projects with these organisations where there is alignment of Hub priorities as defined through community and SAG consultation. The Hub has continued to engage with partner organisations to identify new and emerging drought resilience priorities and issues and those that weren't identified in the initial consolations. We

	have consulted on Hub operational and administrative processes through the Hub member survey and a workshop held with SA Grower Groups and made improvements where possible. Hub member organisations continue to put new and emerging project ideas forward and these are discussed in the context of the priorities that have been collectively identified by the Hub members and local producers.
Output 3: Outputs of innovation programs and opportunities (specific to First Nations communities)	The SA Drought Hub participated in 11 project meetings to identify First Nations knowledge gaps in the Hub and drought and climate knowledge gaps in First Nations communities, discuss opportunities for collaboration and engagement with First Nations communities. A total of 48 Ngarrindjeri community members attended four climate yarning circles. This included 42 general community members, 5 Aboriginal Rangers, and one researcher. There has previously been little discussion on the cultural impacts of climate change to first nations communities in South Australia and the yearning circles discussions focused attention on this and assisted the Ngarrindjeri Community to identify where cultural practices are most likely to be vulnerable in a changing climate. This has started a conversation on how best to adapt Ngarrindjeri cultural practices and protect significant areas in a changing climate. This information will guide the work program of a Murraylands and Riverland Landscape Board on-country project to address climate change impacts in the Lower River Murray and Coorong. The project is being co-designed and delivered in conjunction with the Ngarrindjeri Aboriginal Corporation (NAC), and the First Nations of the Southeast (FNSE). The SA Drought Hub and the Landscape Boards participating in the yarning circles project have provided links between One Basin CRC, the SA Department for Environment and Water (DEW), and the Goyder Institute's Healthy Coorong, Healthy Basin Project. Several of the priorities identified by community through the climate yarning circles present opportunities for research and funding support through these programs. There is interest in the climate yarning circles from other Aboriginal groups in South Australia and in particular from the Upper Muray River.
Output 4: Scholarships	Two 12-month internships focusing on the grains industry have been directly supported by the SA Drought Hub, with both employed through hub member organisations, The Hart Field site group and the South Australian Research and Development Institute (SARDI). Both interns are grains industry focused are work alongside industry

	groups, grower groups and producers to build their knowledge and experience in real world farming situations. A short term (12 week) intern is supporting the evaluating wheat germplasm demonstration site being conducted at the University of Adelaide's Roseworthy Campus. A PhD student is also engaged in this project to look at the mechanisms behind the enhanced growth in some wheat populations. 125 undergraduate students from a range of agricultural disciplines are using a Hub initiated drought resilience learning and study site at the University of Adelaide's Roseworthy Campus as part of their undergraduate subjects and learning.
Output 5: Support for access to funding	The Hub has supported 26 grant and tender applications across a range of grants programs with most of these applications being for greater than $500,000. Of these 10 applications were successful totalling over $23 million ($23,704,541). Support for each of the successful grant applications has included: • Hub resource provision, • linking the projects to other FDF programs on the ground, • providing SA Drought Hub presentations, workshops and other content to value add to events, • Participation on project steering committees • provision of collaborative and value add opportunities as appropriate, • Hub staff support for delivery of the project • Providing connections and links to Hub members and Network Partners as required to assist project delivery. • Promotion of the project events to Hub members, Partners, and the broader Hub network. • Extend information, materials and products created through the project to Hub members, Partners, and the broader Hub network. • Provide information and networking support to SA Hub members and Network Partners involved in the project.
Output 6: MEL Plans	The SA Drought Hub MEL Plan has been completed.
Output 7: Learning activities to support resilience with end users and those who support end users (and associated products)	There were 78 learning activities undertaken as listed in the Data Capture spreadsheet. Most of these were delivered through SA Drought Hub member organisations as part of project activity delivery in SA regional areas. These events were supported and attended by the Hub Node Coordinators, Adoption Officers, and other staff members where possible. • 30 Farm Visits • 11 field days • 30 workshops • 3 farmer bus tours • 2 seminars

	• 1 conference • 1 forum Total attendance across all events was 2,156 people and includes 1,672 farmers / producers / pastoralists, 214 farm advisors / farm consultants, 154 project and government extension staff, 69 grower groups / farmer groups, 38 researchers and students, and 9 Knowledge Brokers. The focus areas of the events varied greatly to meet regionally specific issues and topics that were prioritised through the Hub's co-design process. Key themes were improved crop and livestock management to increase drought resilience, planning for the impact of drought and climate change, water security on farm, seasonal planning, and soil management to increase drought resilience.
Output 8: Products from co-designed activities to support First Nations engagement and knowledge	A total of 48 Ngarrindjeri community members attended the four climate yarning circles which were funded and supported by the Hub. This included 42 general community members, 5 Aboriginal Rangers, and one researcher. Climate charts were produced for each of the four climate yarning circles. These provided the average temperature for each month since temperature records had been collected from local Bureau of Meteorology (BOM) weather stations (often 100 years or more). Each month and year were ranked into deciles. This highlighted the trend towards increasing temperature over the past 20 to 30 years. The trend of increasing temperature was uniform at each of the four weather station sites where data was taken: Goolwa, Meningie, Strathalbyn and Murray Bridge The same was undertaken for rainfall. There was no discernible trend or pattern in rainfall across the years that the data was presented, and this was in line with climatic predictions for the region. This information helped guide the conversation on climate change and the associated impacts and was used to demonstrate the increasing temperature trend and the likelihood that future droughts will be exacerbated by this. This prompted discussion on the likely impacts on Ngarrindjeri culture, community and the environment, and what the community could do to address these through a Murraylands and Riverland Landscape Board Project to address climate change on-country.
Output 9: Hub communication activities plans and products	A total of 93 communications activities and products were delivered, and this included newsletters and articles within them, Media releases and interviews, social media posts, videos, fact sheets, podcasts, and trials results compendiums and booklets.

	The monthly SA Drought Hub newsletter provided an avenue for the promotion of all FDF programs and activities being delivered in South Australia. A wide range of news stories and upcoming events were promoted through the newsletter which provided a resource for cross promotion and information sharing between FDF Programs. The Newsletter currently has 391 subscribers with an average open rate greater than 50%. Distribution is far greater than this as Hub member organisations often forward the newsletter to their members or use content from it in their own newsletters. The Hub hosts an active social media account on Facebook, X, LinkedIn, and Instagram, with total metrics being 905 posts to 248 followers reaching 49,647 users. The number of followers increased on all platforms since December 2022 and in particular an Instagram (86% increase) and LinkedIn (51% increase) The SA Drought hub website has been maintained and contains several drought resilience resources, the Hub newsletter, and information on Hub and other FDF program activities, and the opportunities for producers and community members to participate. The Hub website had 1642 users, 4814 page views, with an average engagement time of 1m 20s. The Hub has commenced a website redevelopment project that will see significant upgrade of the site to include detailed project summaries with information products developed through the project available to uses. The site will also contain a library of drought resilience resources from a range of partner organisations, RDC's, Industry Groups, that users can access and utilize drought resilience information from.
Output 10: On-farm trials and demonstrations to build drought resilience	The Hub played various roles including funding, supporting, implementing, facilitating, assisting, and promoting a range of on ground trials and demonstrations which were hosted across a total of 52 commercial farms and 2 research farms with a total of 654 farmers visiting the sites. Additionally, 221 advisors, consultants, government Extension officers, project officers and grower group staff visited the on-farm trial and demonstration sites, and can share the knowledge gained with their client and member networks. The focus of the sites is mixed farming, cropping and rangeland livestock production. All on-farm trials and demonstration sites align with the co-designed priorities identified through each of the Nodes. This ensures relevance to local producers from across different regions in SA and alignment to local grower group priorities which in turn increases the amount of attendance at the on-farm trial and demonstration sites.

Output 11: Co-designed Operational Plans	Projects were co-designed between Hub Members based on the themes and priorities stemming from the initial consultation. For each project that was scoped several people and organisations were engaged to assist in the design of the project. This facilitated strong alignment with the deliverables and developed ownership of all involved in the project. Node Stakeholder Advisory Groups (SAGs) have also had involvement in project prioritisation and design since their inception over the past 12 months. This has strengthened the Hub's co-design process. Grower and other end user satisfaction has been measured through the Hub Learning Activity Survey undertaken at learning events such as field days and workshops and producer visits to demonstration sites and farm walks. The feedback from the 334 surveys was overwhelmingly positive, indicating a high level of satisfaction with the process and outcomes of co-design. In response to the Hub Learning Activity Survey question: *The content of this activity was easy to understand*: 97% of respondents either agreed (78%) or strongly agreed (19%) with 3% of respondents disagreeing. In response to the Hub Learning Activity Survey question: *The content of this activity was relevant in helping me to prepare for, or respond to, future drought?* 90% of respondents either agreed (79%) or strongly agreed (11%) with 6% of respondents disagreeing. 4% of respondents said this question was not applicable to them. In response to the Hub Learning Activity Survey question: *The content of this activity was relevant to my needs?* 95% of respondents either agreed (80%) or strongly agreed (15%) with 2% of respondents disagreeing. 3% of respondents said this question was not applicable to them.
Output 12: Activity Plans that incorporate aspects of co-design processes	The Hub developed an activity work plan with alignment to the themes and priorities identified through the co-design process, and the associated issues and ideas that sit within these. This plan has been used to guide project priorities, project design, delivery mechanism, and level of investment. The Activity work plan has recently been revised based on Hub member and staff feedback to better reflect the program delivery that members are seeking, and to better meet Hub roles and priorities as they evolve. In response to the question to Hub Members: *How satisfied are you with the extent to which your input is valued and ultimately influences Hub priorities and planned activities?* 100% of respondents were either satisfied (48%) or very satisfied (52%)

Output 13: Outputs from Hub governance activities conducted	The Hub has an Advisory Board to advise on strategic directions and meeting the needs of local agricultural industries and an Institutional Management Committee (IMC) to oversee the governance and management arrangements and progress of the Hub. Each Node has established a Stakeholder Advisory Group (SAG) to assist co-design in each of the node regions, helping to refine projects and bringing together local providers and producers to participate in the projects. Senior Hub staff conduct a weekly management meeting to plan the strategic engagement and delivery of Hub Activities, and identify opportunities to link to other programs and initiatives. Operations staff conduct a weekly meeting to identify and discuss project delivery opportunities, update progress of current projects, share project results, and look for opportunities for cross node collaborations. In response to the member survey question: *How satisfied are you with the opportunities to ask questions about the Hub priorities and planned activities?* 100% of the 44 respondents were satisfied (34%) or very satisfied (64%) In response to the member survey question: *How satisfied are you with the opportunities to provide your thoughts and inputs on the Hub priorities and planned activities?* 98% of the 44 respondents were either satisfied (39%) or very satisfied (59%) with 2 % of respondents dissatisfied. In response to the member survey question: *How satisfied are you with the extent to which your input is valued and ultimately influences Hub priorities and planned activities?* 100% of the 44 respondents were either satisfied (48%) or very satisfied (52%)
Output 14: Drought commercialisation opportunities	The SA Drought Hub has not promoted any commercialization opportunities as this has not been the focus of the Hub. The co-design undertaken by the hub identified opportunities to support on farm extension and adoption of recently commercialized tools and products through demonstration sites. There has been significant interest from grower groups and commercial companies on the demonstration of newly commercialised products which contribute the addressing the priorities identified through the hub's co-design. This has led to their contribution and involvement in projects being delivered by the Hub. Demonstrations of recently commercialised technologies have included: • Improving on-farm water security using innovative remote sensing systems. See https://biggroup.org.au/videos • Use of property mapping technology for property planning in rangelands.

	• Use of NDVI and other remote sensing to determine pasture volume and health as a guide to grazing management in low rainfall areas. • Assessment and promotion of pasture forecasting tools available to assist decision making in available pasture supply, feed budgeting, and stocking rate.
Output 15: Drought and resilience tools and products	The Hub has developed 34 knowledge and information resources which were received and viewed by more than 3000 people collectively. These include fact sheets, case studies, podcasts, videos, websites, newsletters, and technical reports to provide information to a wide range of audiences using the extensive SA Drought Hub and Hub member organisation communications networks. The purpose of the materials has varied and includes drought resilience findings and how to guides in the form of case studies, on farm trail and demonstration site findings in the form of technical reports, and farmer to farmer advice and knowledge sharing in the form of videos and podcasts. The SA Drought Hub has promoted drought resilience tools and products including videos, case studies and podcasts which have been developed by other Drought Resilience Hubs and organisations not associated with the SA Drought Hub. These have been promoted through the Hub media channels such as our social media accounts and newsletter. Two Climate Services for Agriculture and DR SAT training sessions were conducted. The workshops had a dual purpose: 1) to train extension staff in the operation and application of these tools, and 2) to provide feedback to the developers of each program on where improvements could be made to make the tools more easily usable to farmers.
Hub Specific Outputs	
	N/A
Outcomes	
Short-term Outcomes	
ST1: Increased collaboration and partnerships among	Hub members include grower and livestock groups, universities, State Government agencies, landscape boards, agribusinesses, and industry groups. Nineteen new Network Partners have joined the Hub as regionally based co-designed projects have commenced

organisations working in RDEA&C	taking the total number of Hub members and network partners to over 80. Node Coordinators and Adoption Officers play a key role in ensuring relevant and appropriate RDEA&E information is disseminated to Hub members, growers and stakeholders as they seek information on drought resilience topics and concerns. The Hub is currently engaged in 58 collaborations and partnerships with a range of RDCs, industry bodies, CRCs, scientific bodies, other FDF programs, and other drought hubs, and these have expanded significantly over the past twelve months and these have led to significant co-contributions towards projects and joint development of funding applications and tenders with hub members.
ST2: Co-design and participatory approaches embedded in the design and delivery of Hub activities	All of the SA Drought Hub Activities being delivered employ a co-design process. This includes alignment of project delivery with the themes and project priorities identified through the initial co-design consultations and working with Hub members, network partners and end users to design and deliver projects to end users. Stakeholder Advisory Groups (SAGs) in each Node act as a sounding board and assist in the co-design of projects that were identified in the initial co-design consultations, helping to refine projects and bringing together local providers and producers to participate in the projects. Adoption Officers and Node co-ordinators also assist with the process of project development. Hub staff attended 180 meetings with member organisations and stakeholders with the primary focus on codesign, implementation, and delivery of projects. Huib staff also attended 28 workshops, 28 field days, 6 information sessions, 5 conferences, 2 forums and 6 other events. Attendance across all events further enabled stakeholder engagement and feedback that assisted the Hub activity and project co-design process. The meetings and events were collectively attended by 5241 people with 1596 growers receiving information about the SA Drought Hub, associated activities, and opportunities for involvement.
ST3: Hubs seen and utilised as key regionally focused institutions for defining and delivering RDEA&C services (relating to drought resilience)	Over the past two years membership has increased by more than 30 organisations as the value of partnering in the SA Drought Hub has been appreciated and realized by an increasing number of organisations. Through these arrangements the Hub is funding and supporting 44 projects of varying scales involving a wide array of Hub member organisations and affiliate bodies. The diversity of projects being delivered through the Hub is a direct consequence of the Hub meeting the local RDEA&C needs and priorities relating to drought resilience of each region and the agricultural sectors and organisations that operate within them through an effective co-design process.

	The SA Drought Hub is seen as a central point for information on Future Drought Fund programs and initiatives. Community members and organisations come to the hub consistently to ask questions about the broader FDF programs and the opportunities to engage in these. Terms like the Future Drought Hub are commonly used by people when referring to the SA Drought Hub as it is seen as the face of the FDF in South Australia. The SA Drought Hub is also invited to have representation on a range of project and industry committees to provide input from a drought and climate risk perspective. These include Regional Drought Resilience Planning, Industry RD&E committees, Industry Blueprints, FDF grants funded project steering committees, and Community base projects. The Hub is currently engaged in 58 collaborations and partnerships outside of the core work being undertaken with hub member organisations and network partners. These have expanded significantly over the past twelve months from 20 collaborations in 2022 and span Peak Industry Bodies, Research and Development Corporations, Governing bodies, Government Agencies, and our many on ground partners across the state. The collaborations are reflective of the growing confidence and understanding of the SA Drought Hubs role in the broader South Australia project delivery landscape, and the opportunities for collaborative effort to add value to projects, participants, and organisations.
ST4: Hubs work effectively as part of a national network/architecture	The Hub is currently engaged in 58 collaborations and partnerships outside of the core work being undertaken with hub member organisations and network partners, and these have expanded significantly over the past twelve months. Discussions with several Research and Development Corporations (GRDC, MLA, Agrifutures, Hort Innovation, Wine Australia, Dairy Australia) have led to co-investment in projects, resource sharing and the Hub delivering RDC funded initiatives such as the Agrifutures funded Innovation Broker. Partnerships with other Hubs and their member organisations have expanded since the commencement of the Cross-Hub Projects, with SA Hub member organisations collaborating and partnering directly with the member organiations of other Hubs in the delivery of projects. The Hub has supported 26 grant and tender applications across a range of grants programs with most of these applications being for greater than $500,000. Of these 10 applications were successful totalling greater than $23 Million. The hub engaged numerous local groups into applications that national organisations were leading.

	The impact of the collaborations has been proved, and a greater number of RDEA&C services are being delivered regionally across South Australia with high levels of grower and user engagement.
ST5: Efficient and effective activities to support RDEA&C and uptake by end users	The SA Drought hub has led and enabled many activities to support RDEA&C. This has included 44 projects being delivered at varying scales via key Hub member organisations, and which regularly contain a mix of in-field demonstrations and learning events. Within these projects there have been 54 demonstration sites established and 78 separate learning events over the 2022/23 financial year. These were attended by a total of 2810 people (2156 at learning events and 654 at demonstration sites). In response to the Hub Learning Activity Survey question: *The content of this activity was easy to understand*: 97% of respondents either agreed (78%) or strongly agreed (19%) with 3% of respondents disagreeing. In response to the Hub Learning Activity Survey question: *The content of this activity was relevant in helping me to prepare for, or respond to, future drought?* 90% of respondents either agreed (79%) or strongly agreed (11%) with 6% of respondents disagreeing. 4% of respondents said this question was not applicable to them. In response to the Hub Learning Activity Survey question: *The content of this activity was relevant to my needs?* 95% of respondents either agreed (80%) or strongly agreed (15%) with 2% of respondents disagreeing. 3% of respondents said this question was not applicable to them. In response to the Hub Learning Activity Survey question: *As a result of this activity, I am likely to make a practice change, or consider making a practice change*? 70% of respondents either agreed (61%) or strongly agreed (9%) with 15% of respondents either disagreeing (14%) or strongly disagreeing (1%). 1% of respondents said it was too early to tell and 14% of respondents said this question was not applicable to them, most likely due to these people being advisors or extension officers rather than farm and property owners and managers. The area of land being managed by people who agreed or strongly agreed that they were likely to make a practice change or consider making a practice change was 20,866,238 Ha.
Hub Specific Short-term Outcomes	
	N/A
Medium-term Outcomes	

MT1: Increased availability and accessibility of, and capacity to use and adopt, knowledge that can be applied to improve drought resilience	The Hub has developed 34 knowledge and information resources which were received and viewed by more than 3000 people collectively and has promoted these using the extensive SA Drought Hub and Hub member organisation communications networks. The type and purpose of these has varied to suit a variety of audiences across different agricultural industries and regions. The resources include drought resilience findings and how to guides in the form of case studies, on farm trail and demonstration site findings in the form of technical reports, and farmer to farmer advice and knowledge sharing in the form of videos and podcasts. These resources have been accessed through a variety of mechanisms and are linked closely with the delivery of Outputs 7, 8, and 10 as the resources were used to compliment learning events, community engagement, and on-farm trial and demonstrations, or were the products from them such as technical reports and case studies. • Total attendance across all learning events was 2,156 people and includes 1,672 farmers / producers / pastoralists, 214 farm advisors / farm consultants, 154 project and government extension staff, 69 grower groups / farmer groups, 38 researchers and students, and 9 Knowledge Brokers. • A total of 52 commercial farms and 2 research farms hosted on farm trials and demonstrations with a total of 654 farmers and 221 advisors, consultants, government Extension officers, project officers and grower group staff visiting these sites. A total of 332 Hub Learning Activity Survey evaluations were collected from participants across these events and in response to the question: 'I would be likely to consult/use the materials again' 96% of the respondents either agreed (81%) or strongly agreed (15%) with 3% of respondents disagreeing and 1% of respondents stating the question was not applicable to them. This demonstrates that end users and stakeholders (such as service providers) rate the generated knowledge and tools generated as appropriate, useful and user-friendly and will use them again to assist in decision making on matters relating to drought resilience in farm businesses.
MT2: Increased adoption and commercialisation of drought resilience technologies and practices	Most of the project delivery effort that is supported or delivered by the Hub is focused on extension and adoption, with smaller efforts towards applied research and development. Commercialisation is not something that the Hub has engaged deeply in as the timeframes to take a product from concept to sale are often far beyond those of the Hub funding agreement, Additionally, given the

	publicly funded nature of the Hub, there are concerns from investors and developers around the need for Hub investments to share the intellectual property rights. The Hub has therefore focused our efforts towards demonstration on farm of newly commercialised products that assist farmers to build drought resilience, which again leans towards the extension and adoption part of RDEA&C. Examples of this include: • The Barossa improved Grazing Group has produced four case studies and a short video to showcase the On-Farm Water Security- Tank Level Monitors- 2023 Project. • Mallee Sustainable Farming Soil Zones project where the 2023 phase of the project focuses on grower adoption with 6 focus farms and a further 9 adoption sites where producers are encouraged to employ soil zone mapping and variable rate fertiliser applications. • Producer adoption in the Tools for pasture Forecasting project, a compilation of information on tools for pasture forecasting relevant to SA producers has been accessed by 454 through the SA Drought Hub and MacKillop Farm management Group websites. • Adoption of satellite imagery for use in pasture management in the *'Ground truthing satellite imagery for use in pasture management and assessing its role in adaptive management of grazing systems in the Upper North of SA'* Project. See fact sheet on the project and outcomes • The '*Remote Water Monitoring in the Arid Lands'* Project. See fact sheet displaying options for water management in pastoral production systems.
MT3: Technologies and practices adopted are effective in improving drought resilience	In response to the Hub Learning Activity Survey question: *As a result of this activity, I am likely to make a practice change, or consider making a practice change*? 70% of respondents either agreed (61%) or strongly agreed (9%) with 15% of respondents either disagreeing (14%) or strongly disagreeing (1%). 1% of respondents said it was too early to tell and 14% of respondents said this question was not applicable to them, most likely due to these people being advisors or extension officers rather than farm and property owners and managers. The area of land being managed by people who agreed or strongly agreed that they were likely to make a practice change or consider making a practice change was 20,866,238 Ha. Examples of practice change occurring can be seen through project case studies and reports. These include:

- The Barossa improved Grazing Group has produced four case studies and a short video to showcase the On-Farm Water Security- Tank Level Monitors- 2023 Project that has been run over the 2022/2023 financial year. These feature positive interviews on the use of the monitoring devices from producers who have had he tank level monitors installed on their properties.
- Mallee Sustainable Farming Soil Zones project where the 2023 phase of the project focuses on grower adoption with 6 focus farms and a further 9 adoption sites where producers are encouraged to employ soil zone mapping and variable rate fertiliser applications on their properties using the methods employed on the focus farms.
- The SA Drought Hub has supported several grower groups to undertake work to adopt and optimise containment feeding of livestock as a drought management practice. This has contributed to and built upon the work undertaken through a range of groups and organisations previously. The adoption of changed practice has been significant and has increase demand for additional information. A follow-on project is currently being developed and will involve a range of grower groups from the SA, Vic and Southern NSW Drought Hubs.
- Producer adoption in the Tools for pasture Forecasting project, a compilation of information on tools for pasture forecasting relevant to SA producers has been accessed by 454 through the SA Drought Hub and MacKillop Farm management Group websites. Advice from consultants and advisors is that growers are using the tools and seeking advice on how to employ them to best effect.
- The Filling Feed gaps project has seen engagement of 118 growers, with 50 growers completing feed testing analysis and making changes to the management of their pastures. Many producers involved in the project were happy to share their existing feed tests with the project and this has supported a peer-to-peer learning approach.
- Adoption of satellite imagery for use in pasture management as a result of the *'Ground truthing satellite imagery for use in pasture management and assessing its role in adaptive management of grazing systems in the Upper North of SA'* Project. The project has seen significant uptake of this technology and opportunity to further this. A quote from the project reads "These practices (Satellite imagery for use in pasture management) are already being adopted in the Upper North of SA. The consultants involved in the project have seen greater interest from growers in

	the technology, many are already paying for satellite map subscriptions and not utilising them to their full potential". A fact sheet on the project and outcomes can be seen is available on the SA Drought hub Website. • The '*Remote Water Monitoring in the Arid Lands'* Project has produced a fact sheet displaying options for water management in pastoral production systems. This has been viewed many times and presented at pastoral field days and events where producers have shown a keen interest in learning more about the technologies and trialing them on their properties. • There has been significant adoption after the delivery of a broad range of demonstration sites that have focused on incorporation of drought resilience measures in existing farming systems and approaches. Whilst often incremental in nature, these changes can greatly increase the drought resilience of farming systems. Learning activity survey results and reports from Grower Groups demonstrate that producers are adopting the practices being presented at the Hub supported demonstration sites.
MT4: Design and delivery of Hub activities is responsive to end-user needs	Grower and other user satisfaction has been measured through the Hub Learning Activity Survey undertaken at learning events such as field days and workshops and producer visits to demonstration sites and farm walks. The feedback from the 332 Learning Activity surveys received across the financial year was overwhelmingly positive, indicating a high level of satisfaction with the process and outcomes of co-design. Results of the learning activity survey are: • In response to the Hub Learning Activity Survey question: *The content of this activity was easy to understand*: 97% of respondents either agreed (78%) or strongly agreed (19%) with 3% of respondents disagreeing. • In response to the Hub Learning Activity Survey question: *The content of this activity was relevant in helping me to prepare for, or respond to, future drought?* 90% of respondents either agreed (79%) or strongly agreed (11%) with 6% of respondents disagreeing. 4% of respondents said this question was not applicable to them. • In response to the Hub Learning Activity Survey question: *The content of this activity was relevant to my needs?* 95% of respondents either agreed (80%) or strongly agreed (15%) with 2% of respondents disagreeing. 3% of respondents said this question was not applicable to them. There is also a high degree of satisfaction expressed through the Hub Member survey (see data presented in Short Term Outcome 2 (ST2)) for the questions:

	• *How satisfied are you with the opportunities to ask questions about the Hub priorities and planned activities?* 100% of respondents were satisfied (34%) or very satisfied (64%) • *How satisfied are you with the opportunities to provide your thoughts and inputs on the Hub priorities and planned activities?* 98% of respondents were either satisfied (39%) or very satisfied (59%) with 2 % of respondents dissatisfied. • *How satisfied are you with the extent to which your input is valued and ultimately influences Hub priorities and planned activities?* 100% of respondents were either satisfied (48%) or very satisfied (52%) • *How satisfied are you with the day-to-day functioning of the Hub?* 41% of respondents were either satisfied (14%) or very satisfied (27%) with 2% of respondents dissatisfied. The remainder of respondents felt this question was not applicable to them.
Hub Specific Medium-term Outcomes	
HS1: Increased capacity, preparedness, and transition towards a future climate with less rainfall	Many of the projects being delivered and the resources and tools being developed through the SA Drought Hub and it's membership, whilst drought resilience focused, also assist in building climate resilience. Details of the projects and the extent to which users have increased their capacity, preparedness, and transition towards a future climate with less rainfall through planning, management, and practice change is provided in short term outcome (ST1) Short term outcome (ST5), medium term outcome (MT3) and medium term outcome (MT4) The Hub has run thirteen workshops across the State which have focused on Historical drought analysis, seasonal climate, and future climate predictions, and the application to decision making. This has included four climate yarning circles with the Ngarrindjeri Aboriginal Corporation and community to discuss climate science, climate change, and impacts on local ecology, community, and culture. The additional 9 workshops have been attended by 212 growers / pastoralists, 44 advisors / extension staff, and 15 project coordinating staff. There has previously been little discussion on the cultural impacts of climate change to first nations communities in South Australia and the yearning circles discussions focused attention on this and assisted the Ngarrindjeri Community to identify where cultural practices are most likely to be vulnerable in a changing climate. This has started a conversation on how best to adapt Ngarrindjeri cultural practices to the changing climate. The SA Drought Hub and the Landscape Boards participating in the yarning circles project have provided links between NAC, One Basin CRC, the SA

	Department for Environment and Water (DEW), and the Goyder Institute's Healthy Coorong, Healthy Basin Project. Several of the priorities identified by community through the climate yarning circles present opportunities for research and funding support through these programs. The workshops attended by growers / pastoralists, advisors / extension staff, and project coordinating staff had significant positive impact. Participants were introduced to Climate Services for Agriculture and a range of other climate tools and products that can assist in seasonally based decision making. Many attendees at the events found these useful and were often unaware of them prior to the workshop.
HS2: Industry sectors are providing broad resilience and innovation support across the state.	Industry sectors in South Australia are strongly engaged in the Hub. Primary Producers SA (PPSA), Livestock SA, Grain Producers SA (GPSA) are all members of the SA Drought Hub and are actively engaged in the design and delivery of Hub activities. Each organisation has representation of the SA FDF Advisory Group (SA Drought Hub advisory group). The South Australian Grains industry Trust (SAGIT) have coinvested in two projects with the SA Drought Hub with SAGIT funding contributions of $582,440. The Hub and SAGIT have also partnered to see two new regionally based intern placements supported and commencing in the 2023 / 2024 financial year. These will be based in the Mid North and on Eyre Peninsula and hosted by Grower Groups. The South Australian Sheep Industry Fund (SIF) have contributed $325,000 towards the Hub to co-invest in a range of sheep industry projects that met identified drought Hub and Industry Blueprint priorities. Hub projects have been developed to that meet these requirements. The priorities identified through the SA Hub co-design process and the projects being delivered align to either the SA Sheep industry Blueprint, SA Beef industry Blueprint, or SA Grains industry Blueprint. This is regularly reported back to the industry bodies and associated committees responsible for the delivery and administration of the blueprints.

1. Context

The SA Drought Hub was established in June 2021 and covers all the agricultural production areas of South Australia through its headquarters at Roseworthy (Hub), and five regionally based Nodes at Minnipa (1), Port Augusta (2), Orroroo (3), Loxton (4) and Struan (5) – see map below). Each Node has a physical presence, but is not constrained by geographic location i.e. partners in the Lower Eyre Peninsula, Adelaide Hills and Fleurieu, Kangaroo Island, Limestone Coast, and the South East have shared interests in transitioning high rainfall farming systems to manage less rainfall and link to the high rainfall Node (Struan) that is physically located in the South East of the state.



The SA Hub has a primary focus on mixed farming, grains and livestock production, but also works with the wine industry and horticulture sectors. Key stakeholders include grower groups, universities, government agencies, indigenous partners, agribusinesses, RDEA&C partners and industry organisations. The Hub also partners with a range of RDEA&C partners including Research and Development Corporations, Cooperative Research Centres, and Research institutes.

Soon after establishment the Hub developed and put in place governance structures and began recruitment of key staff. There was significant engagement with members and network partners to determine their drought resilience priorities though July and August, and seven Codesign workshops were undertaken across regional South Australia through September to identify community and

grower ideas and needs in relation to building drought resilience (see outputs 2, 11, and 12). Numerous meetings and consultations with Hub Members including Grower Groups, Industry Bodies and Landscape Boards also took place to identify their drought resilience priorities. A Codesign report was developed and through further consultation, priorities established for each region of SA. The co-design work was being undertaken concurrently with the development of the Hub's operational and activity work plans, communications plans and MEL plans, and whilst imperfect in that co-design and project implementation was running ahead of planning, it did enable the Hub to commence project delivery from early 2022 with a range of end user designed, community led initiatives. The initial suite of activities/projects were primarily regionally specific. Subsequent activity and project development has focused on achieving a balance of multi-region multi-industry projects but still with appropriate regionalisation of solutions and delivery approaches. This is attributable to Hub members having an increased level of confidence in the Hub program and seeing the broader opportunities that it presents at a local as well as multi-region multi-industry level.



The SA Drought Hub has been involved in three cross Hub projects, one as a project lead and the other two as a participant. These were critical in not only getting Hubs to work together, but also in providing a mechanism for SA Drought Hub members to engage with other Hubs and their member organisations and understand the opportunities the National Hubs network presented. Two of the Cross Hub projects have follow-on adoption effort being undertaken in South Australia through the Hub and FDF-Extension and Adoption of Drought Resilience Farming Practices Grants: Farmers2Founders TEKFARM - Accelerating and scaling adoption of drought resilience technologies, De-risking the seeding program. Adoption of key management practices for the success of dry and early sown crops. ", and Containment Feeding for drought and productive resilience.

The expansion of the Hub to Innovation has provided opportunity for co-design of projects that deliver outcomes for farmers in climate resilience, market access, digital agriculture and biosecurity. Where possible, the design of these projects has been synergistic with also enhancing drought resilience.

Overall, recruitment across the Hub has been very successful noting some challenges in timely recruitment and retention of Node Coordinators. In periods of no substantive Node Coordinator other Hub staff have serviced the roles but, it has reduced overall Hub engagement in some regions.

All Node Coordinator positions are now filled, and Stakeholder Advisory Groups (SAGs) in each node have been established to increase regional engagement. These comprise of local hub member organisations and primary producers. The role of the SAGs is to guide Node Coordinators and Hub staff, on priorities and to contribute to activity co-design. . The SAGs act as a sounding board, helping to refine projects and bringing togethere local providers and producers to participate in the Hub activities.

Further to the regional staffing considerations detailed above, there are some staffing and organisational capacity constraints within some of the Hub's key delivery organisations. Many of the Hub members delivering projects in regional areas are also delivering a range of other Federal, state, RDC and CRC, programs, and projects. The Hub focus on drought resilience coupled with a collaborative intent to complement these other programs where appropriately meeting Hub co-design objectives and end user identified priorities has been well received. There are some regions however, particularly those with smaller groups or lower population, where there is a desire for additional projects to be delivered but the organisations in those areas don't have the staffing capacity to support them sufficiently. This has been addressed to some degree through the Hub providing regionally based interns but there is still additional capacity to enable a full suite of Hub activities delivered effectively to these regions.

Most of the project delivery effort that is supported or delivered by the Hub is focused on extension and adoption coupled with some efforts involving applied research and development. The SA Drought Hub delivery model is for projects to be led by organisations that operate close to the ground and in a local context. As such, most Hub projects are led by the twenty SA based Grower Groups and eight Landscape (NRM) Boards. Whilst these organisations mostly 'lead' projects, there are a wide range of other hub member and partner organisations that are involved in the delivery of projects. The Hub brings these groups and organisations together in partnership arrangements that see project delivery optimised.

Regarding commercialisation the Hub has focused on demonstration on farm of newly commercialised products that assist farmers to build drought resilience. Overall, this approach has enabled the Hub to have a program of working spanning RDEA&C.



Overall, the SA Drought Hub is operating very effectively. The Hub has increased the number of member and network partners in each of the two full financial years of operation, networks and collaborations have increased, and partnerships with a range of organisations with South Australia and nationally have developed and been successful. Most importantly, the Hub members and growers (end users) are overwhelmingly satisfied with the Hub and the activities the Hub is delivering (see outputs 7,10,11, and 13). This shows that the codesign process has been effective in designing projects from the ground up with local communities and growers in mind.

The SA Drought Hub aims to build upon the solid foundation that has been established over the past two years, continuing to engage with members, network partners and end users to ensure regional needs and priorities are met, and linking partners and collaborators into these opportunities.

2. Emerging Issues

There is increased potential of dry times and/or drought conditions in South Australia linked with the current climate drivers including the El Niño Alert and forecast positive (unfavourable) Indian Ocean Dipole (IOD). It is imperative that there is coordination of effort around resilience and any response measures. The SA Drought Hub has a significant regional presence, and it is likely that some members of drought affected communities will expect a Drought Hub to have a role during periods of dry times and drought beyond preparedness and resilience. The Hub executive has engaged with Primary Industries and Regions SA and FDF SA Advisory Group to help ensure effective within state coordination of effort across resilience, preparedness and response Consideration on the role Drought Resilience Adoption and Innovation Hubs have during drought is important, particularly given the significant regional presence and community-facing and farmer-facing nature of Hubs.

The SA Drought Hub has been highly successful at building community networks across South Australia for enhancement of drought resilient practices. The lack of clarity of the potential role of Hubs in 2024-28+ creates risks at three levels. First, on staff retention; second on optimal design of projects of short-, medium and longer-term; and third, on community confidence that Hubs are worth investing time and resources in. The Hub has sought to mitigate the risk of staff loss through planning for an extension in time to run activities through calendar year 2024. The design of projects currently focuses on activities to end of 2024; some of these activities would generate greater impact with increased longevity to assist with transition from knowledge and skill building to successful adoption of improved drought resilient practices by farmers. The SA Drought Hub has benefitted from significant buy-in from regional communities and organisations, however, these stakeholders are now seeking greater clarity on the future of the SA Drought Hub given their efforts to make it successful to date. Delays in certainty may limit the ability of Hubs to effectively engage communities into the future.

There is a clear desire from SA Drought Hub Members that the Hub to engage in building climate resilience, particularly to heat and extreme temperate, rather than only focusing on drought. The Hub members and the wider community see climate change as a more permanent threat and have a desire to address this in practical ways that are regionally designed and relevant.

3. Other Relevant Initiatives

3.1 FDF related

Support was provided for a range of FDF programs being delivered in South Australia by other providers. It is an objective of the Hub to support complementary FDF programs where possible and to make sure that end users engaged in Hub activities are provided the opportunity to also engage in these programs. Hub support to other FDF Programs has included:

- Hub support for 19 applications submitted to FDF Grant Rounds (Long Term trials, Extension and Adoption of Drought Resilient Practices). Of these 5 applications were successful (See Output 5)
- FDF Innovation Grants: Innovation, Proof of Concept, and Ideas grants – Provided links to Hub networks and contact points within regional communities, discussions with project leads to identify opportunities to link Hub activities and complement the grant delivery activities.
- FDF Soils and Land Management Grants: Provided links to Hub members and networks, sat on project community of practices to identify opportunities to link Hub activities and complement the grant delivery activities.
- Climate Services for Agriculture (CSA) – Promotions through Hub media, The Hub ran two training workshops for South Australian based agricultural extension officers, provided Hub networks and contact points to assist in CSA Development, reviewed and provided comment on the CSA tool.
- DR SAT – Promotions through Hub media, The Hub ran two training workshops for South Australian based agricultural extension officers, provided Hub networks and contact points to assist with DR SAT development, reviewed and provided comment on the DR SAT tool.
- FDF Regional Drought Resilience Planning (RDRP) Program – input via steering committee for two RDRP programs, promoted the program and opportunities for community involvement through Hub media, engaged Hub members and network partners into the planning process, linked hub co-design information to the RDRP process, provided community contacts and advice on local group engagement, assisted with consultations, reviewed and commented on the RDRP drafts.
- FDF Farm Business Resilience Program - promoted through Hub media, engaged Hub members and network partners into the program, provided Hub co-design process and Hub priorities that were identified through co-design.
- FDF Helping Regional Communities Prepare for Drought - promoted through Hub media, engaged Hub members and network partners into the program, assisted and supported several community led applications, provided Hub co-design process and Hub priorities that were identified through co-design, provided Hub information to program applicants, advised on
- FDF Drought Resilience Leaders Program - promoted through Hub media, engaged Hub members and network partners into the program, provided Hub presentations at events.

3.2 Non FDF related

The SA Drought Hub has engaged in many non-FDF related initiatives which have complemented the work of the Hub and created further opportunities to build drought and climate resilience across the hub's area of operation.

The SA Drought Hub has had strong involvement in the delivery of the National Agricultural Innovation Agenda through the South Australian Innovation Hub. This has seen the delivery of 11 activities spanning mixed farming, horticulture, livestock production, and aquaculture, with project focus on a range of areas including AgTech, Biosecurity, market access and climate resilience. These activities engage more than thirty partner organisations in their application and delivery with the activities being delivered as follows:

- Activity 1 - Business case – SA Drought Resilience Adoption and Innovation Hub.
- Activity 2 - Livestock Biosecurity Extension Program.
- Activity 3 - Enhancing Orchard Soils.
- Activity 4 - Cropping without Glyphosate.
- Activity 5 - Hatchery development for commercially important native seaweed.
- Activity 6 - Methane reduction in beef cattle in commercial production systems.
- Activity 8 - Rapid detection of significant crop diseases.
- Activity 9 - Improving climate resilience by matching irrigation to almond canopy size and water use.
- Activity 10 - Improving the climate resilience of the Australian sheep industry.
- Activity 11 - Develop and demonstrate virtual fencing as a tool for improving climate resilience in sheep and cattle enterprises.

All activities are progressing well and reporting on these activities will be undertaken in accordance with the Innovation Hub Head Agreement and associated Activity Work Plan.

The Hub has partnered with Agricultures to employ an innovation Broker to address AgriFutures priorities. The Innovation Broker has engaged a wide range of industry groups and growers to identify key project needs and opportunities with an in-paddock soil monitoring and rapid assessment project being developed. This will see the demonstration at four sites across South Australia of numerous new soil monitoring and in paddock assessment technologies that provide real time information. The project has commenced with technology assessment for suitability underway. The project will engage several grower groups in the delivery and demonstration of the soil monitoring technologies.

The SA Drought Hub has provided support for a range of carbon farming initiatives that aim to diversify on-farm income streams. Whilst this offers a degree of financial resilience through income diversification, it also compliments the drought resilience wok of the Hub given the secondary benefits to landscape management, soil health, shade and shelter for stock that carbon farming projects can offer.

The SA Drought Hub has supported the Regional Soils Co-ordinator in the delivery of program activities. The Hub assisted the South Australian Regional Soils Coordinator to engage with the SA Arid Lands Landscape Board for the delivery of a project to look at soil parameters that influence the

management and control of Buffel Grass, an introduced grass plant that can dominate arid and semi-arid landscapes, displacing native vegetation and reducing species diversity through competition and altered fire regime. This project saw the Regional Soils Coordinator engage of First Nations Rangers to participate in the investigations and undertake training in the classification and management of soils.



4. MEL Report on Outcomes

4.1 SHORT – TERM OUTCOMES

ST1: Increased collaboration and partnerships among organisations working in RDEA&C

1. **Output(s) Report**

Outputs contributing to outcome ST1 (see Appendix C) are:

- Output 2: Outputs of innovation programs and opportunities
- Output 5: Support for access to funding
- Output 7: Learning activities to support resilience with end users and those who support end users (and associated products)
- Output 10: On-farm trials and demonstrations to build drought resilience
- Output 11: Co-designed Operational Plans
- Output 12: Activity Plans that incorporate aspects of co-design processes
- Output 13: Outputs from Hub governance activities conducted

2. **ST1 Outcome Report**

ST1 Outcome Indicators in Data Capture Plan

- Number of organisations collaborating in and with the Hub (including types/purposes of partnerships).
- Extent to which collaboration and partnerships are functioning well.
- Extent to which collaboration and partnerships are achieving desired outcomes.
- Evidence that engagement in Hub related networks has led to shared learning, increased access to RDEA&C resources and assistance and confidence in responding to challenges.

The SA Drought Hub has 59 founding partners which include a range of grower and livestock groups, universities, State Government agencies, landscape boards, agribusinesses, and industry groups. All founding members of the SA Drought Hub members are listed in the Head Agreement between the SA Drought Hub and the Department for Agriculture Fisheries (DAFF) and Forestry and the SA Drought Hub Operational Plan.

Nineteen new Network Partners (see list below) have joined the Hub as regionally based co-designed projects have commenced taking the total number of Hub members and network partners to over 80. The range of organisation types highlights the diversity of projects and regions the SA Drought Huband membership are engaged in.

- Agriculture Kangaroo Island Incorporated
- Barry Mudge Consulting
- Kangaroo Island Landscape Board
- Alinytjara Wilurara Landscape Board
- Mid North High Rainfall Zone Group
- Northern Sustainable Sand Hills
- SA Livestock Consultants
- Tatiara District Council
- Trengove Consulting
- Green Brain
- Ngarrindjeri Aboriginal Corporation
- PC Treloar
- Fleurieu Farming Systems Inc
- Grassland Society of SA
- Crop Science Society of SA Incorporated
- EPAG Research
- Gladigau Enterprises
- Landcare Association of SA
- Cousins Merino Services

There have been no organisations withdraw from the SA Drought Hub although some individual staff members from within organisations have withdrawn due to the following reasons:

- Changes to their roles and function by their employer organisation.
- Insufficient time due to increased workload in non-SA Drought Hub work and initiatives
- Insufficient opportunities through the SA Drought Hub as the role of Hubs has become better defined i.e.: primary focus on production-based resilience building initiatives.

Hub members include the South Australian Grower Group network, three South Australian based Universities, The South Australian Research and Development Institute (SARDI) and several private research agronomy companies. Hub initiatives have increased collaboration between these organisations and have seen increased grower group and grower access to REDA&C resources as a result. This is evidenced through the collaborations being realised in the delivery of SA Drought Hub projects, the information being shared between organisations and ongoing co-design of projects that see applied research taken through an extension and adoption pathway via SA Drought Hub projects.



Node Coordinators and Adoption Officers play a key role in ensuring relevant and appropriate RDEA&E information is disseminated between Grower Groups and to their members and other producers as information is sought on drought resilience topics and concerns.

The Hub currently has several projects being delivered through Grower Groups that have multiple partners that otherwise would not have collaborated on the delivery of the project. The Hub has brought these partners together and facilitated the opportunity to work together on a common issue. This includes Gower Groups working together to deliver a project in each of their regions with their local producers and sharing information between the groups on the progress of the on-ground activities and the learnings from them. The Hub has supported grower bus tours to different nodes and regions within south Australia so that project learnings can be shared between growers and extension officers from different parts of the State. This is evidenced through the Hubs contractual arrangements for project delivery which show the diverse array of project participants involved in many projects.

Hub members have reported through member surveys and verbally that the co-design process has allowed them to undertake key projects of local importance that were not possible to deliver though other programs. The Hub co-design process has empowered Hub Grower Group members to lead the design of projects to best meet the needs of local farmers and communities. Whilst this certainly has provided the assistance needed to respond to drought resilience challenges at local scales, it is too early to determine if this has translated to confidence in adopting new practices.

The Hub is currently engaged in 58 collaborations and partnerships, and this has expanded significantly over the past twelve months from less than 20 collaborations at the same time in 2022. The collaborations have also increased in diversity, purpose, and intricacy to be far more purposeful in achieving targeted outcomes for all organisations involved.

Discussions with several Research and Development Corporations (GRDC, MLA, Agrifutures, Hort Innovation, Wine Australia, Dairy Australia) have led to co-investment in projects, resource sharing and the Hub delivering RDC funded initiatives such as the Agrifutures funded Innovation Broker. Partnerships with other Hubs and their member organisations have expanded since the commencement of the Cross-Hub Projects, with SA Hub member organisations collaborating and partnering directly with the member organiations of other Hubs in the delivery of projects. The SA Hub facilitated links between the Hub Knowledge Broker network and the National Environmental

Science Program (NESP) which has led to discussions on joint project opportunities. Landcare SA signed up as a Hub partner and we have had discussions on collaborative project opportunities, linked Landcare SA into several Hub member projects, programs, and grant applications, and provided Hub support for grant applications led by Landcare SA.

These are only some of the examples of collaboration and partnerships being driven by the Hub. A full list of the 58 current Hub collaborations and partnerships is provided in the Data Capture Spreadsheet under the ST1 Tab.

ST2: Co-design and participatory approaches embedded in the design and delivery of Hub activities

1. **Output(s) Report**

Outputs contributing to outcome ST2 (see Appendix C) are:

- Output 11: Co-designed Operational Plans.
- Output 12: Activity Plans that incorporate aspects of co-design processes.
- Output 13: Outputs from Hub governance activities conducted.

2. **ST2 Outcome Report**

ST2 Outcome Indicators in Data Capture Plan

- Extent to which co-design and participatory principles and approaches are used in the design and delivery of Hub activities.
- Extent to which users feel engaged in the design and delivery of Hub activities.

All of the SA Drought Hub Activities being delivered employ a co-design process. This includes alignment of project delivery with the themes and project priorities identified through the initial co-design consultations and working with Hub members, network partners and end users to design and deliver projects to end users.

The SA Drought Hub took the priorities identified in each of the Hub Nodes through the initial co-design consultations undertaken in late 2021 and has worked collectively with Hub Members since to codesign projects that recognise and add value to past and current investments, are tailored to local farming systems and environmental conditions, engage local and regional stakeholders in the design and delivery of projects, and are of the highest priority to local end users. Projects are primarily delivered through the South Australian Grower Group Network and specific targeted and localised project development has been undertaken through these groups and Landscape Boards from across the State since the initial co-design workshops. This ensures the projects recognize and meet the principles outlined above. The projects developed to date are listed in the data capture spreadsheet in various sections.

Where an issue may not have been initially identified but has since become important, producers and Hub member organisations can present project ideas to the Hub through our Nodes and Node

Stakeholder Advisory Groups (SAGs). The SAGs are made up of representatives from Hub member organisations and local producers. Where the relevant SAG feels the project is an important drought resilience measure for local producers, the project can be supported.

SAGs also act as a sounding board and assist in the co-design of projects that were identified in the initial co-design consultations, helping to refine projects and bringing together local providers and producers to participate in the projects. Node co-ordinators also assist with the process of project development.

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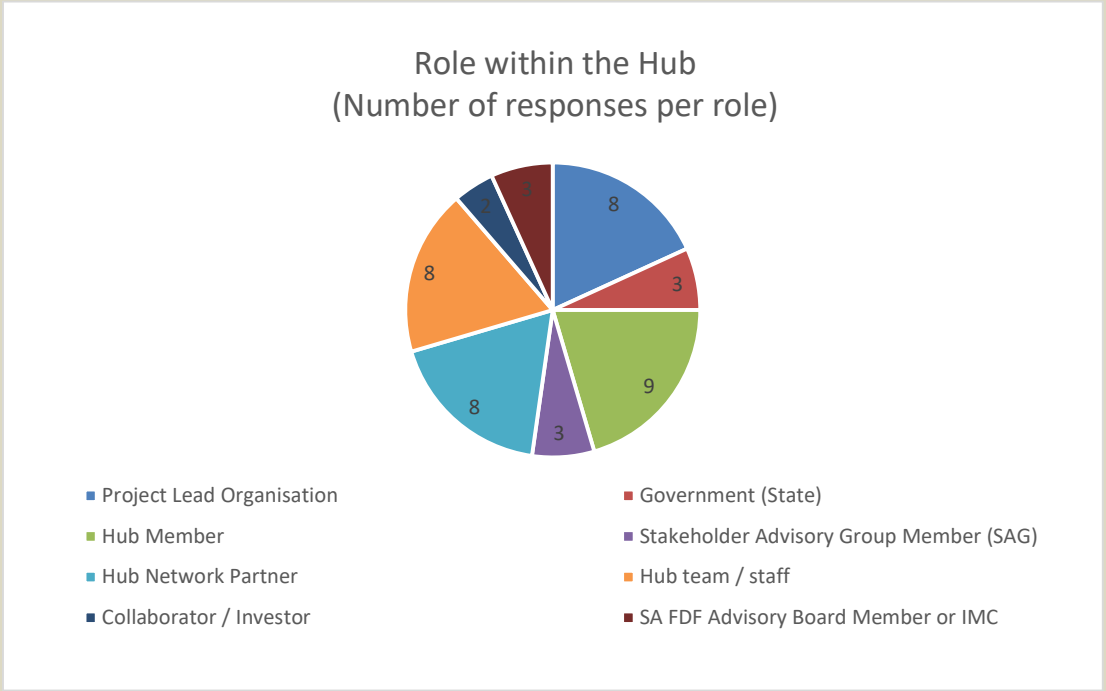
The Hub also has a sponsorship program with a rapid application and assessment process that allows smaller groups and smaller projects to access Hub funding and resource support for project opportunities as they arise. The key feature to this program is that applications are completed through a simple online process taking approximately 10 minutes to complete. Applications go directly to Hub management staff who assess and advise of the outcome within a few days. This has provided an avenue for the engagement of a wide range of smaller member organisations and farmer groups to undertake locally relevant and important drought resilience learning events such as bus tours, workshops and field days.

Hub staff attended 180 meetings with member organisations and stakeholders with the primary focus on codesign, implementation, and delivery of projects. Huib staff also attended 28 workshops, 28 field days, 6 information sessions, 5 conferences, 2 forums and 6 other events. Attendance across all events further enabled stakeholder engagement and feedback that assisted the Hub activity and project co-design process. The meetings and events were collectively attended by 5241 people with 1596 growers receiving information about the SA Drought Hub, associated activities, and opportunities for involvement.

The Activity work plan has recently been revised to better reflect the program delivery that member and partner organisations are seeking. The revised activities will better meet the needs of Hub members, network partners and end users, with the changes being made as part of the ongoing co-design process the SA Drought Hub is engaged in.

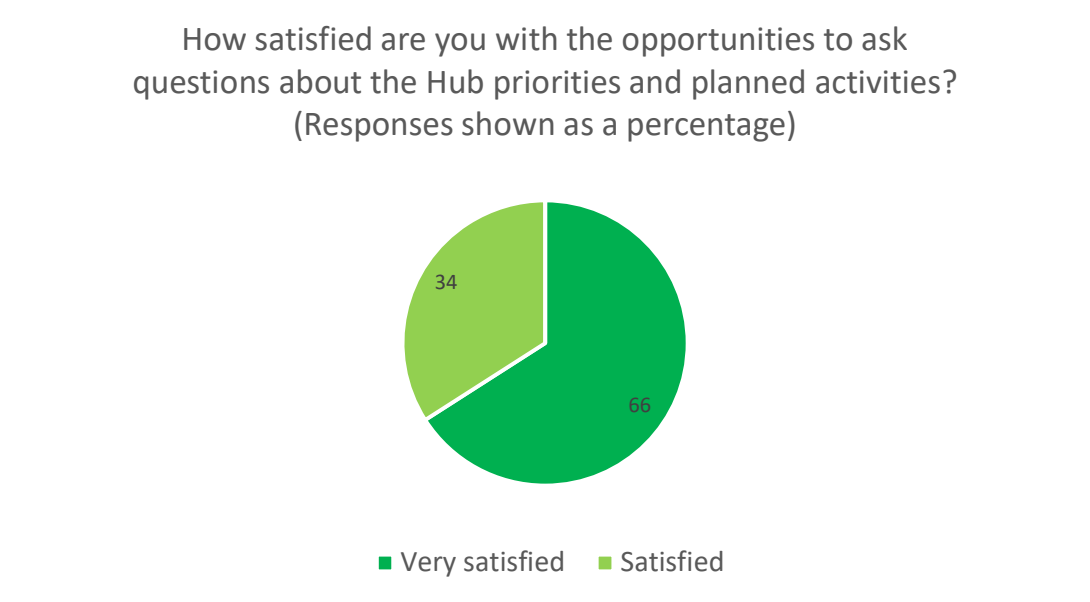
The extent to which users feel engaged in the design and delivery of Hub activities has been measured through the Hub Member survey. The SA Drought Hub member survey was distributed in July 2023 to people from key Hub member and partner organisations, Hub governance committees and groups, and staff to assess the degree of satisfaction with the Hub's governance processes and level engagement. A total of 44 responses were received (44% return rate) with the table below showing the number of responses for each role within the Hub. It is important to note that many of the organisations and people engaged in the SA Drought Hub have more than one role and people were asked to complete the survey for the main role they undertake within the SA Drought Hub.

Role within the Hub	Number of responses
SA FDF Advisory Board Member or IMC	3
Stakeholder Advisory Group Member (SAG)	3
Hub Member	9
Hub Network Partner	8
Project Lead Organisation	8
Collaborator / Investor	2
Government (State)	3
Hub team / staff	8
TOTAL	**44**

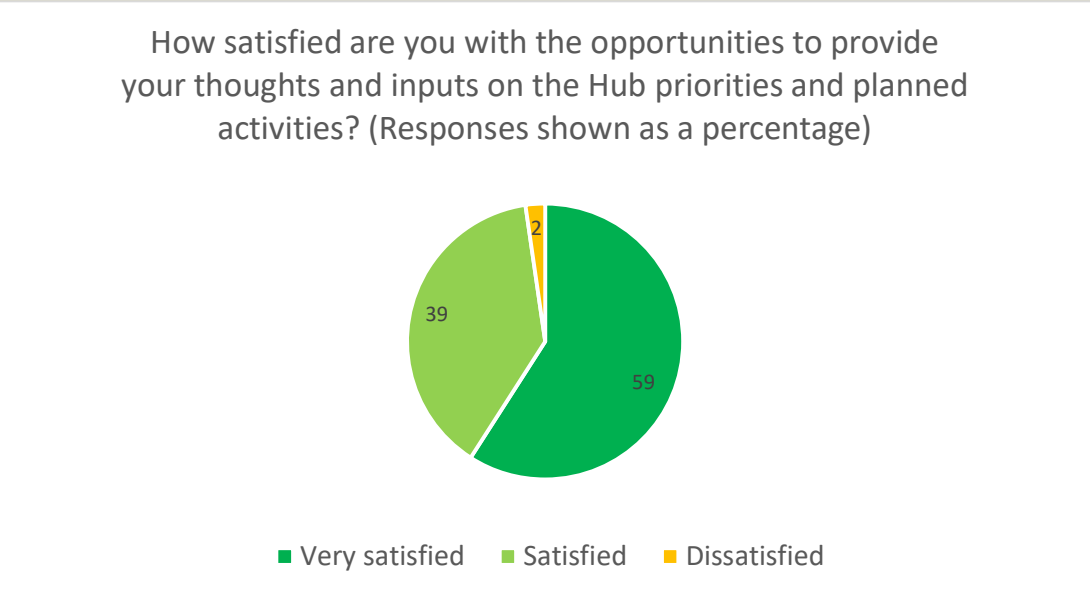


The level of satisfaction by governance members on their level of input, the extent to which it is valued and its impact on guiding the program was positive in all regards.

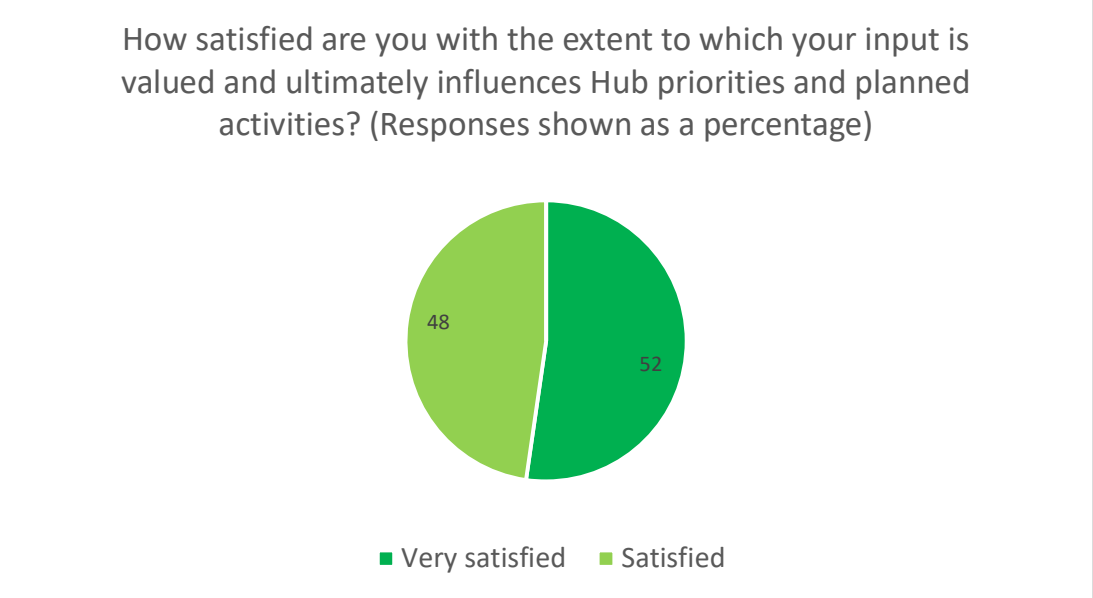
In response to the member survey question: *How satisfied are you with the opportunities to ask questions about the Hub priorities and planned activities?* 100% of the 44 respondents were satisfied (34%) or very satisfied (64%)



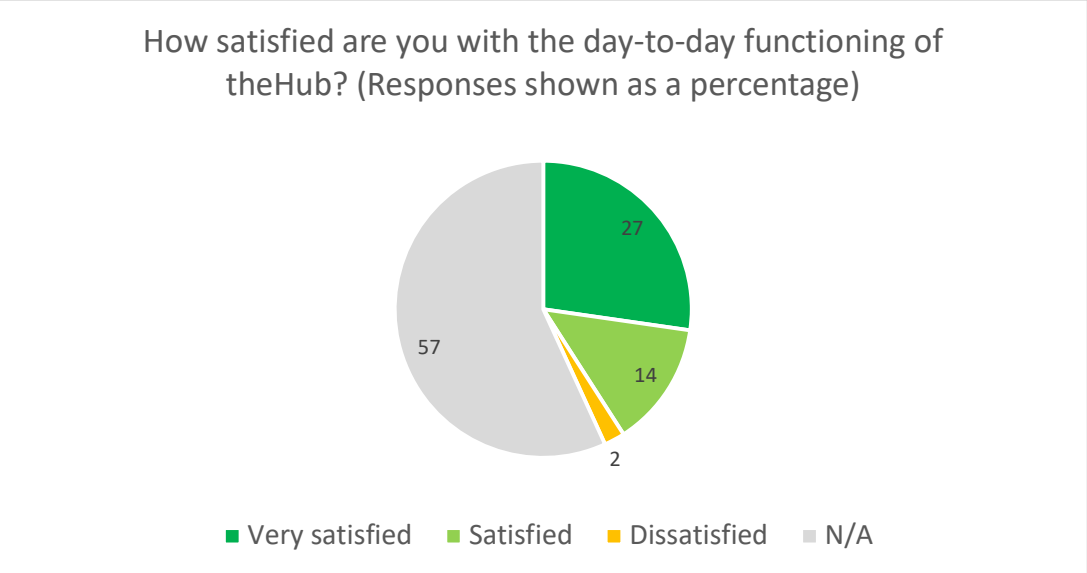
In response to the member survey question: *How satisfied are you with the opportunities to provide your thoughts and inputs on the Hub priorities and planned activities?* 98% of the 44 respondents were either satisfied (39%) or very satisfied (59%) with 2 % of respondents dissatisfied. This response was from one person who felt the Hub did not engage in sufficient dialogue outside of agricultural matters, needed to engage better with local government and have a greater focus on mental health, wellbeing, and urban environments, and build the links between farming and regional towns.



In response to the member survey question: *How satisfied are you with the extent to which your input is valued and ultimately influences Hub priorities and planned activities?* 100% of the 44 respondents were either satisfied (48%) or very satisfied (52%)



In response to the member survey question: *How satisfied are you with the day-to-day functioning of the Hub? 41%* of the 44 respondents were either satisfied (14%) or very satisfied (27%) with 57% of the 44 respondents feeling that this question was not applicable to them as they don't have involvement in the 'day to day' functioning of the Hub. There was also 2% of respondents who were dissatisfied. This response was from the same person who was dissatisfied when asked the question: *How satisfied are you with the opportunities to provide your thoughts and inputs on the Hub priorities and planned activities?* Their dissatisfaction was for the reasons outlined above.



Overwhelmingly there was a positive response to the SA Drought Hub from those who responded to the survey. Key areas of satisfaction were; that the Hub was easy to work with and added value to the project delivery landscape across SA, Hub staff were helpful and provided quick advice and support to members and partners, the partnerships within the Hub were performing well, and that hub governance and engagement was working well.

Key areas identified for improvement were to better communicate strategic objectives, have more of a climate change focus delivering transformational scale projects, streamline administrative processes, although there was acknowledgement that this had improved, and the need to be vigilant in avoiding duplication of project delivery. These will be addressed over the 2023 / 2024 financial year.

The SA Grower Group network play a key role in the delivery of Hub activities to growers and other end users. A workshop held with the Executive Officers of these groups to identify areas of satisfaction and those in need of improvement saw positive feedback provided on the Hub's co-design and engagement processes, and the flexibility in program delivery to allow integration and coordinated delivery with other projects and investments that the groups are delivering. Areas identified for improvement were consistent with those identified through the broader member survey.

ST3: Hubs seen and utilised as key regionally focused institutions for defining and delivering RDEA&C services (relating to drought resilience)

1. **Output(s) Report**

Outputs contributing to outcome ST3 (see Appendix C) are:

- Output 5: Support for access to funding
- Output 11: Co-designed Operational Plans
- Output 12: Activity Plans that incorporate aspects of co-design processes

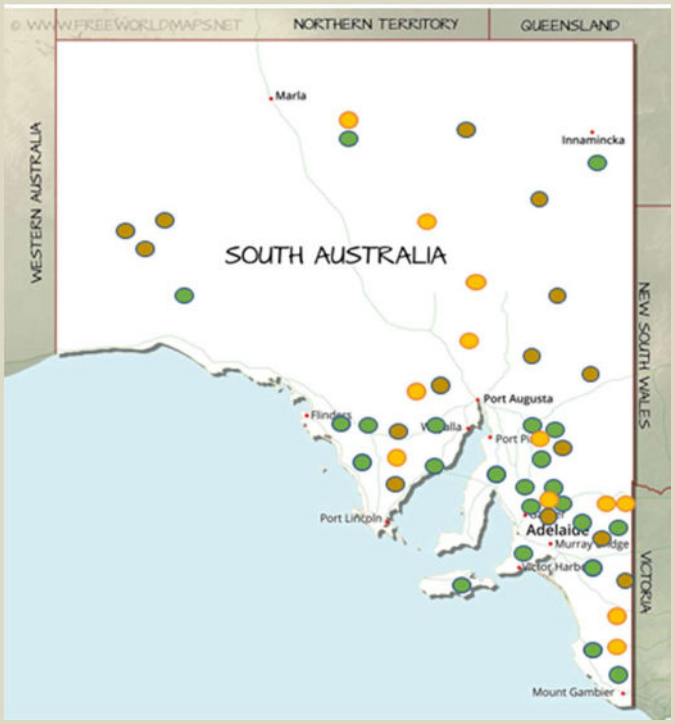
NB; The information provided in ST1: Increased collaboration and partnerships among organisations working in RDEA&C, also contributes the the ST3 outcome.

2. **ST3 Outcome Report**

ST3 Outcome Indicators in Data Capture Plan

- Hubs are *seen* as key regionally focused institutions for defining and delivering RDEA&C services relating to drought resilience.
- Hubs are utilised as key regionally focused institutions for defining and delivering RDEA&C services relating to drought resilience (and how).
- Extent to which the Hubs are responding to the local RDEA&C needs and priorities relating to drought resilience of each region.

The Hub is seen as key regionally focused institution for defining and delivering RDEA&C services relating to drought resilience and has through partnership arrangements engaged over 80 organisations as members and partners in the Hub. Over the past two years membership has increased by more than 30 organisations as the value of partnering in the SA Drought Hub has been appreciated and realized by an increasing number of organisations. Through these arrangements the Hub is funding and supporting 44 projects of varying scales involving a wide array of Hub member organisations and affiliate bodies. A Map of project sites is displayed below and offers an indication of the distribution of project delivery sites across South Australia, bearing in mind that many of these sites host multiple activities. The diversity of projects being delivered across the state is a direct consequence of the Hub meeting the local RDEA&C needs and priorities relating to drought resilience of each region and the agricultural sectors and organisations that operate within them through an effective co-design process. All of the projects have come from Hub consultation and co-design priorities that were identified by communities in each of our Node locations. The projects are then codesigned with Local providers, farmers, advisory groups and hub staff, led by local organisations with famers and community membership, and delivered by Hub member organisations in partnership with the local farming community contributing to the project delivery and outcomes.



The SA Drought Hub is seen as a central point for information on Future Drought Fund programs and initiatives. Community members and organisations come to the hub consistently to ask questions about the broader FDF programs and the opportunities to engage in these. Terms like the Future Drought Hub are commonly used by people when referring to the SA Drought Hub as it is seen as the face of the FDF in South Australia.

The SA Drought Hub is also invited to have representation on a range of project and industry committees to provide input from a drought and climate risk perspective. These include Regional

Drought Resilience Planning, Industry RD&E committees, Industry Blueprints, FDF grants funded project steering committees, and Community base projects.

The Hub is currently engaged in 58 collaborations and partnerships outside of the core work being undertaken with hub member organisations and network partners, and these have expanded significantly over the past twelve months from 20 collaborations in 2022. These span Peak Industry Bodies, Research and Development Corporations, Governing bodies, Government Agencies, and our many on ground partners across the state. The collaborations are reflective of the growing confidence and understanding of the SA Drought Hubs role in the broader South Australia project delivery landscape, and the opportunities for collaborative effort to add value to projects, participants, and organisations.

ST4: Hubs work effectively as part of a national network/architecture

1. **Output(s) Report**

Outputs contributing to outcome ST4 (see Appendix C) are:

- Output 1: Knowledge development and sharing (products developed from)
- Output 2: Outputs of innovation programs and opportunities
- Output 5: Support for access to funding
- Output 10: On-farm trials and demonstrations to build drought resilience.

2. **ST4 Outcome Report**

ST4 Outcome Indicators in Data Capture Plan

- Extent, effectiveness and outcomes of collaboration between nodes and with other Hubs, RDCs, state/territory agencies and other stakeholders. Hubs are *seen* as key regionally focused institutions for defining and delivering RDEA&C services relating to drought resilience.

The Hub is currently engaged in 58 collaborations and partnerships outside of the core work being undertaken with hub member organisations and network partners, and these have expanded significantly over the past twelve months from 20 collaborations in 2022. Discussions with several Research and Development Corporations (GRDC, MLA, Agrifutures, Hort Innovation, Wine Australia, Dairy Australia) have led to co-investment in projects, resource sharing and the Hub delivering RDC funded initiatives such as the Agrifutures funded Innovation Broker. Partnerships with other Hubs and their member organisations have expanded since the commencement of the Cross-Hub Projects, with SA Hub member organisations collaborating and partnering directly with the member organiations of other Hubs in the delivery of projects. The SA Hub facilitated links between the Hub Knowledge Broker network and the National Environmental Science Program (NESP) which has led to discussions on joint project opportunities. Landcare SA signed up as a Hub partner and we have had discussions on collaborative project opportunities, linked Landcare SA

into several Hub member projects, programs, and grant applications, and provided Hub support for grant applications led by Landcare SA.

These are only some of the examples of collaboration and partnerships being driven by the Hub. A full list of the 5 current Hub collaborations and partnerships is provided in the Data Capture Spreadsheet on the ST1 Tab.

The Hub has supported 26 grant and tender applications across a range of grants programs with most of these applications being for greater than $500,000. Of these 10 applications were successful totaling over $23 Million (see output 5). Many of the applications were led by Hub members and supported by Hub in a range of ways. For many of the applications the Hub brought partners together to collaborate where there was a common interest. The hub also engaged numerous local groups into applications that national organisations were leading. This provided opportunities for local groups to engage in large projects and also opportunity for the national bodies to ensure meaningful local level engagement in project delivery.

The impact of the collaborations has been improved and a greater number of RDEA&C services being delivered regionally across South Australia with high levels of grower and user engagement.

ST5: Efficient and effective activities to support RDEA&C and uptake by end users

1. **Output(s) Report**

Outputs contributing to outcome ST5 (see Appendix C) are:

- Output 1: Knowledge development and sharing (products developed from)
- Output 3: Outputs of innovation programs and opportunities (specific to First Nations communities)
- Output 4: Scholarships
- Output 5: Support for access to funding
- Output 7: Learning activities to support resilience with end users and those who support end users (and associated products)
- Output 8: Products from co-designed activities to support First Nations engagement and knowledge
- Output 10: On-farm trials and demonstrations to build drought resilience.
- Output 14: Drought commercialisation opportunities
- Output 15: Drought and resilience tools and products

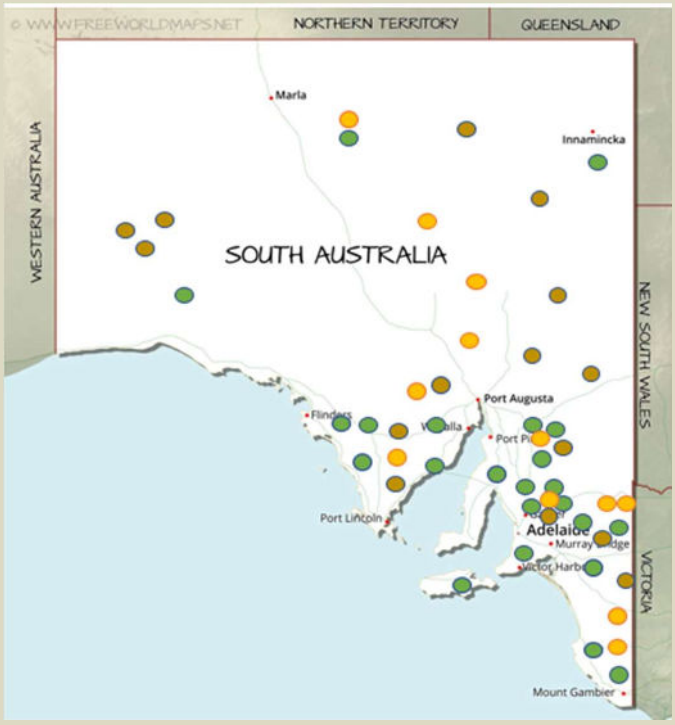
2. **ST5 Outcome Report**

ST5 Outcome Indicators in Data Capture Plan

- Number and type of activities to support RDEA&C and uptake by end users.
- Extent to which participants in Hub related training/skilling activities report that they have gained relevant knowledge and skills and how they are applying this in practice.

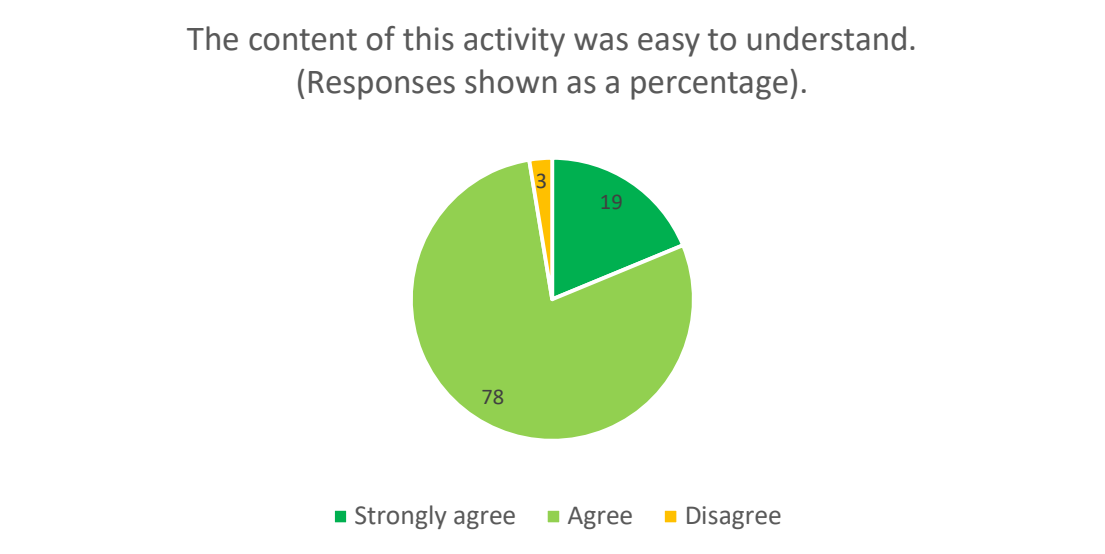
- Level and type of practice change (and intended change) that has resulted from engagement in Hub-related activities.

The SA Drought hub has led and enabled many activities to support RDEA&C. This has included 44 projects being delivered at varying scales via key Hub member organisations, and which regularly contain a mix of in-field demonstrations and learning events. Within these projects there have been 54 demonstration sites established and 78 separate learning events over the 2022/23 financial year. These were attended by a total of 2810 people (2156 at learning events and 654 at demonstration sites). A Map of project sites is displayed below and offers and indication or the distribution of project delivery sites, bearing in mind that some sites have multiple activities.

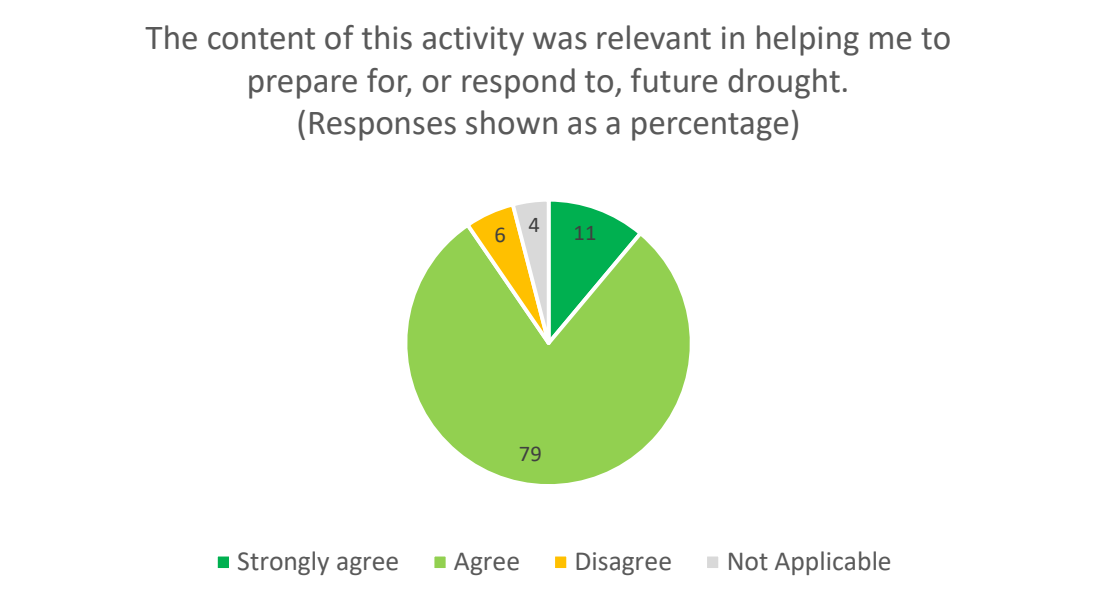


The extent to which participants in Hub related training/skilling activities report that they have gained relevant knowledge and skills and how they are applying this in practice has been measured through the Hub Learning Activity Surveys. These have been undertaken at learning events such as field days and workshops and producer visits to demonstration sites and farm walks. The feedback from the 332 Learning Activity surveys received across the financial year was overwhelmingly positive, indicating a high level of satisfaction with the process and outcomes of co-design, increase in the level of awareness and knowledge, and an intent to change practices and/or adopt technologies to increase their farms' resilience to drought. The reason there are 2,810 attendees at learning events and demonstration sites and only 332 learning activity surveys is that most SA Drought Hub events are embedded into existing regional activities and events which have their own unique MEL requirements. Hub learning activity surveys are only employed at stand-alone Hub events which there are not all that many of relative to total number of attendees because our preference is to integrate Hub activities where possible. This provides the maximum exposure for Hub activities.

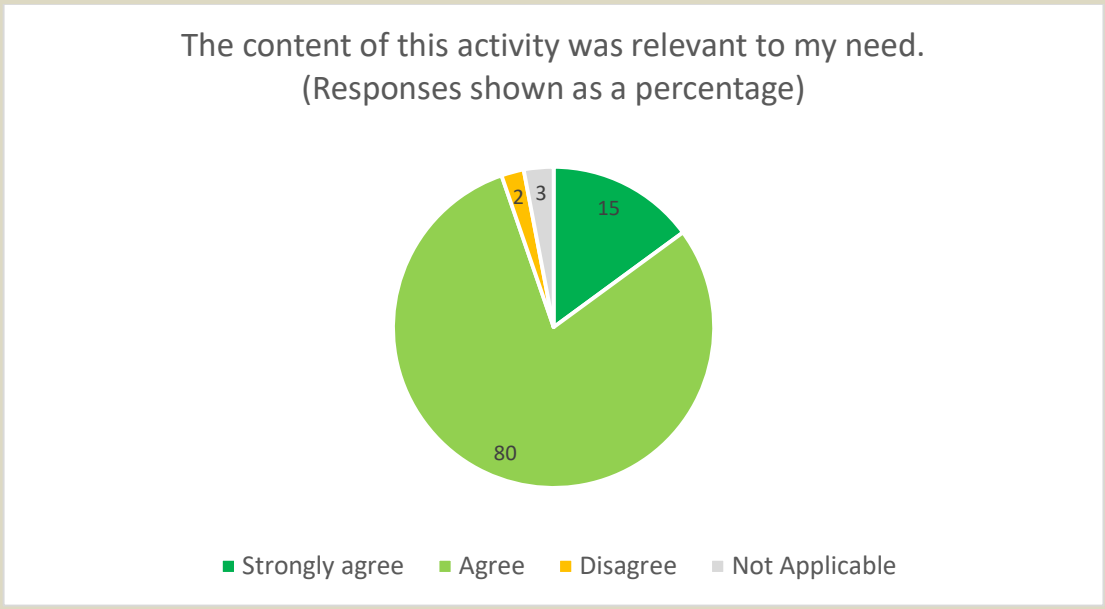
In response to the Hub Learning Activity Survey question: *The content of this activity was easy to understand*: 97% of the 306 respondents either agreed (78%) or strongly agreed (19%) with 3% of respondents disagreeing.



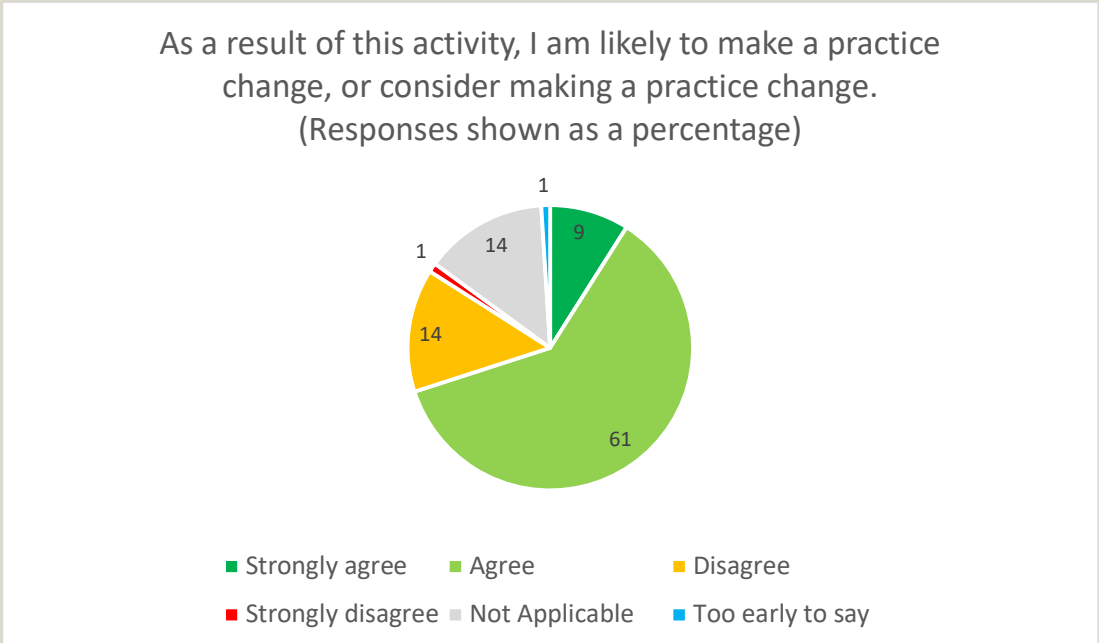
In response to the Hub Learning Activity Survey question: *The content of this activity was relevant in helping me to prepare for, or respond to, future drought?* 90% of the 308 respondents either agreed (79%) or strongly agreed (11%) with 6% of respondents disagreeing. 4% of respondents said this question was not applicable to them.



In response to the Hub Learning Activity Survey question: *The content of this activity was relevant to my needs?* 95% of the 307 respondents either agreed (80%) or strongly agreed (15%) with 2% of respondents disagreeing. 3% of respondents said this question was not applicable to them.



In response to the Hub Learning Activity Survey question: *As a result of this activity, I am likely to make a practice change, or consider making a practice change*? 70% of the 296 respondents either agreed (61%) or strongly agreed (9%) with 15% of respondents either disagreeing (14%) or strongly disagreeing (1%). 1% of respondents said it was too early to tell and 14% of respondents said this question was not applicable to them, most likely due to these people being advisors or extension officers rather than farm and property owners and managers. The area of land being managed by people who agreed or strongly agreed that they were likely to make a practice change or consider making a practice change was 20,866,238 Ha.



The level and type of practice change varies between projects, although most proposed changes will be incremental and adjustments to current practice rather than transformational changes to farming systems and business structures. This is to be expected as the majority of Hub projects to date have focused on incremental changes as identified through the Co-design consultation and

prioritisation process which was undertaken and is ongoing with Hub member organisations and producers. It can be a limitation in co-design that often discussion centers on how to fix existing issues through adjustments to current practice rather than the transformational changes that may be required to maintain long term viability. The SA Hub is aware of this and has begun to implement more transformational projects. Whilst these will not completely replace the incremental projects as there is certainly a need for these, it will provide a balance of short, medium, and longer term practice changes that growers need to consider.

4.2 SHORT–TERM OUTCOMES HUB SPECIFIC

The SA Drought Hub does not have any Hub Specific Short-Term Outcomes.

4.3 MEDIUM–TERM OUTCOMES

MT1: Increased availability and accessibility of, and capacity to use and adopt, knowledge that can be applied to improve drought resilience

1. **Output(s) Report**

Outputs contributing to outcome MT1 (see Appendix C) are:

- Output 1: Knowledge development and sharing (products developed from)
- Output 2: Outputs of innovation programs and opportunities
- Output 3: Outputs of innovation programs and opportunities (specific to First Nations communities)
- Output 7: Learning activities to support resilience with end users and those who support end users (and associated products)
- Output 8: Products from co-designed activities to support First Nations engagement and knowledge
- Output 9: Hub communication activities plans and products
- Output 10: On-farm trials and demonstrations to build drought resilience
- Output 14: Drought commercialisation opportunities
- Output 15: Drought and resilience tools and products

2. MT1 Outcome Report

MT1 Outcome Indicators in Data Capture Plan

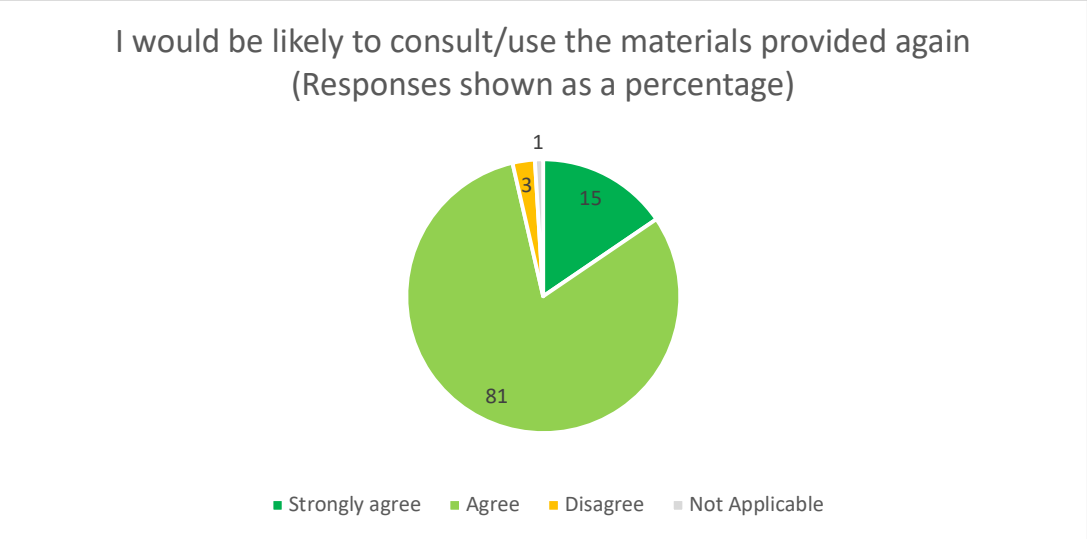
- Number and type of resources and information outputs that have been developed through Hub activities.
- Extent to which Hub activities has increased knowledge sharing amongst Hub partners and collaborators.
- Extent to which these resources and outputs have been accessed and used by end users, and the value they rate their appropriateness, usefulness and user-friendliness.
- Increased/added capacity of end users to use and adopt knowledge that can be applied to improve resilience to future drought.
- Knowledge is delivered in (more) ways that meet local community needs and preferences.
- Extent to which stakeholders feel they can (better) access the information they need related to resilience when they need/want it.
- Extent to which end users and stakeholders (such as service providers) rate the generated knowledge and tools generated as appropriate, useful and user-friendly.

The Hub has developed 34 knowledge and information resources which were received and viewed by more than 3000 people collectively (See data Capture Spreadsheet Outcome 15 tab) and has promoted these using the extensive SA Drought Hub and Hub member organisation communications networks. These include fact sheets, case studies, podcasts, videos, websites, newsletters, and technical reports to provide information to a wide range of audiences. The purpose of these has varied to suit a variety of audiences across different agricultural industries and different regions. The resources include drought resilience findings and how to guides in the form of case studies, on farm trail and demonstration site findings in the form of technical reports, and farmer to farmer advice and knowledge sharing in the form of videos and podcasts.

These resources have been accessed through a variety of mechanisms and are used to compliment Hub learning events, community engagement initiatives, and on-farm trial and demonstrations.

- Total attendance across all learning events was 2,156 people and includes 1,672 farmers / producers / pastoralists, 214 farm advisors / farm consultants, 154 project and government extension staff, 69 grower groups / farmer groups, 38 researchers and students, and 9 Knowledge Brokers.
- A total of 52 commercial farms and 2 research farms hosted on farm trials and demonstrations with a total of 654 farmers and 221 advisors, consultants, government Extension officers, project officers and grower group staff visiting these sites.

A total of 332 Hub Learning Activity Survey evaluations were collected from participants across these events and in response to the question: 'I would be likely to consult/use the materials again' 96% of the 304 respondents either agreed (81%) or strongly agreed (15%) with 3% of respondents disagreeing and 1% of respondents stating the question was not applicable to them. This demonstrates that end users and stakeholders (such as service providers) rate the generated knowledge and tools generated as appropriate, useful and user-friendly and will use them again to assist in decision making on matters relating to drought resilience in farm businesses.



The SA Drought hub website has been maintained and contains several drought resilience resources, the Hub newsletter, and information on Hub and other FDF program activities, and the opportunities for producers and community members to participate. The SA Drought Hub website had 1642 users, 4814 page views, with an average engagement time of 1m 20s. The Hub has commenced a website redevelopment project that will see significant upgrade of the site to include detailed project summaries with information products developed through the project available to uses. The site will also contain a library of drought resilience resources from a range of partner organisations, RDC's, Industry Groups, that users can access and utilize drought resilience information from.



The SA Drought Hub newsletter provided an avenue for the promotion of all FDF programs and activities being delivered in South Australia. A wide range of news stories and upcoming events were promoted through the newsletter which provided a resource for cross promotion and information sharing between FDF Programs. The Newsletter currently has 391 subscribers with an average open rate greater than 50%. Distribution is far greater than this as Hub member organisations often forward the newsletter to their members or use content from it in their own newsletters.

MT2: Increased adoption and commercialisation of drought resilience technologies and practices

1. **Output(s) Report**

Outputs contributing to outcome MT2 (see Appendix C) are:

- Output 2: Outputs of innovation programs and opportunities
- Output 7: Learning activities to support resilience with end users and those who support end users (and associated products)
- Output 10: On-farm trials and demonstrations to build drought resilience
- Output 14: Drought commercialisation opportunities

2. **MT2 Outcome Report**

MT2 Outcome Indicators in Data Capture Plan

- Extent to which end users have adopted drought resilience technologies and practices developed or promoted by the Hub.
- Extent to which drought resilience technologies and practices developed or supported by the Hub have been commercialised where appropriate (by commercialisation stage).

Most of the project delivery effort that is supported or delivered by the Hub is focused on extension and adoption, with smaller efforts towards applied research and development. The Hub currently has 90% of projects with an extension and adoption focus which are delivered by regionally based providers such as Grower Groups and Landscape Boards. Commercialisation is not something that the Hub has engaged deeply in as the timeframes to take a product from concept to sale are often far beyond those of the Hub funding agreement, Additionally, given the publicly funded nature of the Hub, there are concerns from investors and developers around the need for Hub investments to share the intellectual property rights. The Hub has therefore focused our efforts towards demonstration on farm of newly commercialised products that assist farmers to build drought resilience, which again leans towards the extension and adoption part of RDEA&C. Examples of this include:

- The Barossa improved Grazing Group has produced four case studies and a short video to showcase the On-Farm Water Security- Tank Level Monitors- 2023 Project that has been run over the 2022/2023 financial year. These feature positive interviews on the use of the monitoring devices from producers who have had tank level monitors installed on their properties.
- Mallee Sustainable Farming Soil Zones project where the 2023 phase of the project focuses on grower adoption with 6 focus farms and a further 9 adoption sites where producers are encouraged to employ soil zone mapping and variable rate fertiliser applications on their properties using the methods employed on the focus farms.



- Producer adoption in the Tools for pasture Forecasting project, a compilation of information on tools for pasture forecasting relevant to SA producers has been accessed by 454 through the SA Drought Hub and MacKillop Farm management Group websites. Advice from consultants and advisors is that growers are using the tools and seeking advice on how to employ them to the best effect.
- Adoption of satellite imagery for use in pasture management because of the *'Ground truthing satellite imagery for use in pasture management and assessing its role in adaptive management of grazing systems in the Upper North of SA'* Project. The project has seen significant uptake of this technology and opportunity to further this. A quote from the project reads "These practices (Satellite imagery for use in pasture management) are already being adopted in the Upper North of SA. The consultants involved in the project have seen greater interest from growers in the technology, many are already paying for satellite map subscriptions and not utilising them to their full potential". A fact sheet on the project and outcomes can be seen is available on the SA Drought hub Website.
- The '*Remote Water Monitoring in the Arid Lands'* Project has produced a fact sheet displaying options for water management in pastoral production systems. This has been viewed many times and presented at pastoral field days and events where producers have shown a keen interest in learning more about the technologies and trialing them on their properties. The Hub is looking to deliver a pastoral region technology adoption project over the next two years that will support this objective.

MT3: Technologies and practices adopted are effective in improving drought resilience

1. Output(s) Report

Outputs contributing to outcome MT3 (see Appendix C) are:

- Output 1: Knowledge development and sharing (products developed from)
- Output 7: Learning activities to support resilience with end users and those who support end users (and associated products)
- Output 8: Products from co-designed activities to support First Nations engagement and knowledge
- Output 10: On-farm trials and demonstrations to build drought resilience

- Output 12: Activity Plans that incorporate aspects of co-design processes
- Output 13: Outputs from Hub governance activities conducted
- Output 14: Drought commercialisation opportunities
- Output 15: Drought and resilience tools and products

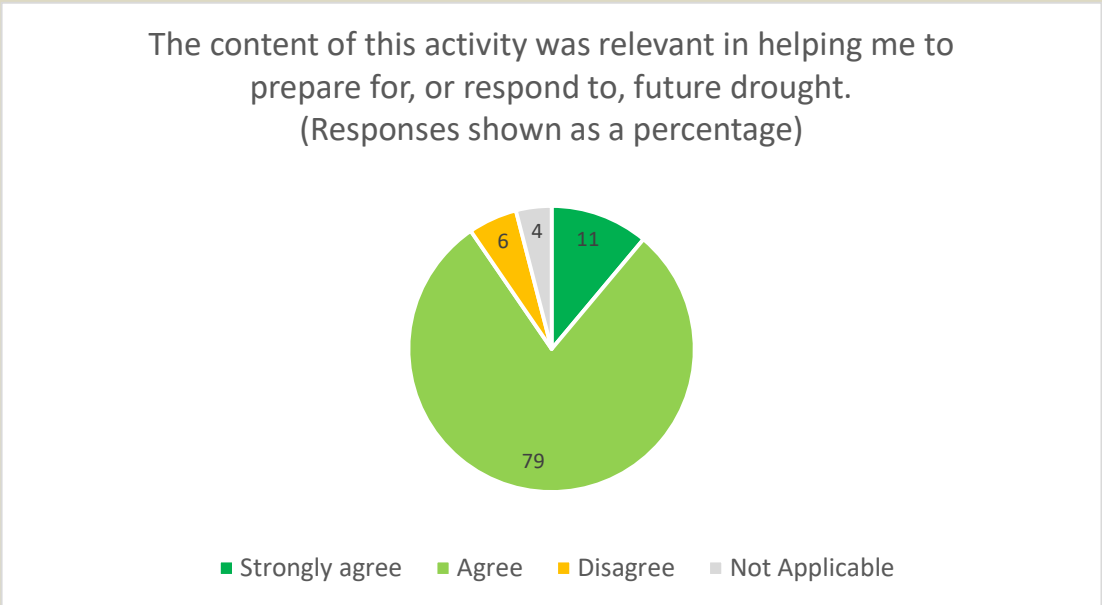
2. MT3 Outcome Report

MT3 Outcome Indicators in Data Capture Plan

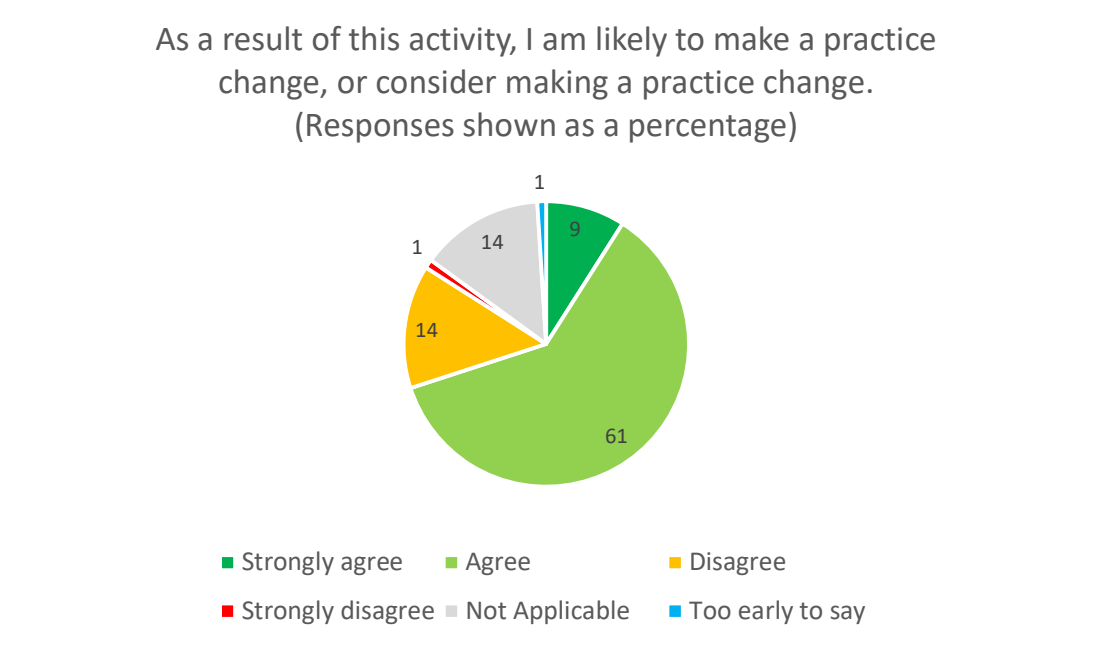
- End users are employing technologies and practices that are effective in improving drought resilience.

The extent to which participants in Hub related training/skilling activities report that they are applying changed and new practices has been measured through the Hub Learning Activity Surveys. These have been undertaken at learning events such as field days and workshops and producer visits to demonstration sites and farm walks. The feedback from the 332 Learning Activity surveys received from producers after attending a Hub demonstration site and / or learning event across the financial year was overwhelmingly positive. 90% of respondents stated that the content of the activity they attended was relevant in helping them prepare for or respond to future drought, and 70% of respondents expressed an intent to change practices and/or adopt technologies to increase their farms' resilience to drought.

In response to the Hub Learning Activity Survey question: *The content of this activity was relevant in helping me to prepare for, or respond to, future drought?* 90% of the 308 respondents either agreed (79%) or strongly agreed (11%) with 6% of respondents disagreeing. 4% of respondents said this question was not applicable to them.



In response to the Hub Learning Activity Survey question: *As a result of this activity, I am likely to make a practice change, or consider making a practice change*? 70% of the 296 respondents either agreed (61%) or strongly agreed (9%) with 15% of respondents either disagreeing (14%) or strongly disagreeing (1%). 1% of respondents said it was too early to tell and 14% of respondents said this question was not applicable to them, most likely due to these people being advisors or extension officers rather than farm and property owners and managers. The area of land being managed by people who agreed or strongly agreed that they were likely to make a practice change or consider making a practice change was 20,866,238 Ha.



As stated in Short Term Outcome 5 (ST5) the level and type of practice change varies between projects although most proposed changes will be incremental and adjustments to current practice rather than transformational changes to farming systems and business structures. This is to be expected as the majority of Hub projects to date have focused on incremental changes as identified through the Co-design consultation and prioritiation process which was undertaken and is ongoing with Hub member organisations and producers. It can be a limitation in co-design that often discussion centers on how to fix existing issues through adjustments to current practice rather than the transformational changes that may be required to maintain long term viability. The SA Hub is aware of this and has begun to implement more transformational projects. Whilst these will not completely replace the incremental projects as there is certainly a need for these, it will provide a balance of short, medium, and longer term practice changes that growers need to consider.

Examples of practice change occurring can be seen through project case studies and reports. These include:

- The Barossa improved Grazing Group has produced four case studies and a short video to showcase the On-Farm Water Security- Tank Level Monitors- 2023 Project that has been run over the 2022/2023 financial year. These feature positive interviews on the use of the monitoring devices from producers who have had he tank level monitors installed on their properties.

- Mallee Sustainable Farming Soil Zones project where the 2023 phase of the project focuses on grower adoption with 6 focus farms and a further 9 adoption sites where producers are encouraged to employ soil zone mapping and variable rate fertiliser applications on their properties using the methods employed on the focus farms.



- The SA Drought Hub has supported several grower groups to undertake work to adopt and optimise containment feeding of livestock as a drought management practice. This has contributed to and built upon the work undertaken through a range of groups and organisations previously. The adoption of changed practice has been significant and has increase demand for additional information. A follow-on project is currently being developed and will involve a range of grower groups from the SA, Vic and Southern NSW Drought Hubs.
- Producer adoption in the Tools for pasture Forecasting project, a compilation of information on tools for pasture forecasting relevant to SA producers has been accessed by 454 through the SA Drought Hub and MacKillop Farm management Group websites. Advice from consultants and advisors is that growers are using the tools and seeking advice on how to employ them to best effect.
- The Filling Feed gaps project has seen engagement of 118 growers, with 50 growers completing feed testing analysis and making changes to the management of their pastures. Many producers involved in the project were happy to share their existing feed tests with the project and this has supported a peer-to-peer learning approach.



- Adoption of satellite imagery for use in pasture management as a result of the *'Ground truthing satellite imagery for use in pasture management and assessing its role in adaptive management of grazing systems in the Upper North of SA'* Project. The project has seen significant uptake of this technology and opportunity to further this. A quote from the project reads "These practices (Satellite imagery for use in pasture management) are already being adopted in the Upper North of SA. The consultants involved in the project have seen greater interest from growers in the technology, many are already paying for satellite map subscriptions and not utilising them to their full potential". A fact sheet on the project and outcomes can be seen is available on the SA Drought hub Website.
- The '*Remote Water Monitoring in the Arid Lands'* Project has produced a fact sheet displaying options for water management in pastoral production systems. This has been viewed many times and presented at pastoral field days and events where producers have shown a keen interest in learning more about the technologies and trialing them on their properties. The Hub is looking to deliver a pastoral region technology adoption project over the next two years that will support this objective.
- There has been significant adoption after the delivery of a broad range of demonstration sites that have focused on incorporation of drought resilience measures in existing farming systems and approaches. Whilst often incremental in nature, these changes can greatly increase the drought resilience of farming systems. Learning activity survey results and reports from Grower Groups have indicated that producers are intending to adopt the practices being presented at the Hub supported demonstration sites and other initiatives.

MT4: Design and delivery of Hub activities is responsive to end-user needs

1. **Output(s) Report**

Outputs contributing to outcome MT4 (see Appendix C) are:

- Output 2: Outputs of innovation programs and opportunities
- Output 11: Co-designed Operational Plans
- Output 12: Activity Plans that incorporate aspects of co-design processes

2. <u>MT4 Outcome Report</u>

MT4 Outcome Indicators in Data Capture Plan

- Extent to which stakeholder needs are reflected in design and delivery of Hub activities.
- Extent to which end users feel that Hub is responsive to their needs in the design and delivery of Hub activities

All of the SA Drought Hub Activities being delivered employ a co-design process. This includes alignment of project delivery with the themes and project priorities identified through the initial co-design consultations and working with Hub members, network partners and end users to design and deliver projects to end users.

The SA Drought Hub took the priorities identified in each of the Hub Nodes through the initial co-design consultations undertaken in late 2021 and has worked collectively with Hub Members since to codesign projects that recognise and add value to past and current investments, are tailored to local farming systems and environmental conditions, engage local and regional stakeholders in the design and delivery of projects, and are of the highest priority to local end users. Projects are primarily delivered through the South Australian Grower Group Network and specific targeted and localised project development has been undertaken through these groups and Landscape Boards from across the State since the initial co-design workshops. This ensures the projects recognize and meet the principles outlined above. The projects developed to date are listed in the data capture spreadsheet in various sections.

Where an issue may not have been initially identified but has since become important, producers and Hub member organisations can present project ideas to the Hub through our Nodes and Node Stakeholder Advisory Groups (SAGs). The SAGs are made up of representatives from Hub member organisations and local producers. Where the relevant SAG feels the project is an important drought resilience measure for local producers, the project can be supported.

The Hub also has a sponsorship program with a rapid application and assessment process that allows smaller groups and smaller projects to access Hub funding and resource support for project opportunities as they arise. The key feature to this program is that applications are completed through a simple online process taking approximately 10 minutes to complete. Applications go directly to Hub management staff who assess and advise of the outcome within a few days. This has provided an avenue for engage ment of a wide range of smaller member organisations and farmer groups to undertake locally relevant and important drought resilience learning events such as bus tours, workshops and field days.



Grower and other user satisfaction has been measured through the Hub Learning Activity Survey undertaken at learning events such as field days and workshops and producer visits to demonstration sites and farm walks. The feedback from the 332 Learning Activity surveys received across the financial year was overwhelmingly positive, indicating a high level of satisfaction with the process and outcomes of co-design. Results of the learning activity surveys are displayed fully under short term Outcome 5 (ST5) and are:

- In response to the Hub Learning Activity Survey question: *The content of this activity was easy to understand*: 97% of the 306 respondents either agreed (78%) or strongly agreed (19%) with 3% of respondents disagreeing.
- In response to the Hub Learning Activity Survey question: *The content of this activity was relevant in helping me to prepare for, or respond to, future drought?* 90% of the 308 respondents either agreed (79%) or strongly agreed (11%) with 6% of respondents disagreeing. 4% of respondents said this question was not applicable to them.
- In response to the Hub Learning Activity Survey question: *The content of this activity was relevant to my needs?* 95% of the 307 respondents either agreed (80%) or strongly agreed (15%) with 2% of respondents disagreeing. 3% of respondents said this question was not applicable to them.

There is also a high degree of satisfaction expressed through the Hub Member survey (see data presented in Short Term Outcome 2 (ST2)) for the questions:

- *How satisfied are you with the opportunities to ask questions about the Hub priorities and planned activities?* 100% of respondents were satisfied (34%) or very satisfied (64%)

- *How satisfied are you with the opportunities to provide your thoughts and inputs on the Hub priorities and planned activities?* 98% of respondents were either satisfied (39%) or very satisfied (59%) with 2 % of respondents dissatisfied.
- *How satisfied are you with the extent to which your input is valued and ultimately influences Hub priorities and planned activities?* 100% of respondents were either satisfied (48%) or very satisfied (52%)
- *How satisfied are you with the day-to-day functioning of the Hub? 41*% of respondents were either satisfied (14%) or very satisfied (27%) with 2% of respondents dissatisfied. The remainder felt this question was not applicable to them.

4.4 MEDIUM-TERM OUTCOMES HUB SPECIFIC

HS1: Increased capacity, preparedness, and transition towards a future climate with less rainfall

1. **Output(s) Report**

Outputs contributing to outcome HS1 (see Appendix C) are:

- Output 1: Knowledge development and sharing (products developed from)
- Output 2: Outputs of innovation programs and opportunities
- Output 3: Outputs of innovation programs and opportunities (specific to First Nations communities)
- Output 4: Scholarships
- Output 5: Support for access to funding
- Output 7: Learning activities to support resilience with end users and those who support end users (and associated products)
- Output 8: Products from co-designed activities to support First Nations engagement and knowledge
- Output 10: On-farm trials and demonstrations to build drought resilience
- Output 14: Drought commercialisation opportunities
- Output 15: Drought and resilience tools and products

HS1 Outcome Report

HS1 Outcome Indicators in Data Capture Plan

- Extent to which end users have increased their capacity, preparedness, and transition towards a future climate with less rainfall through planning, management, and practice change,

Many of the projects being delivered and the resources and tools being developed through the SA Drought Hub and it's membership, whilst drought resilience focused, also assist in building climate resilience. Details of the projects and the extent to which users have increased their capacity, preparedness, and transition towards a future climate with less rainfall through planning, management, and practice change is provided in short term outcome (ST1) Short term outcome (ST5), medium term outcome (MT3) and medium term outcome (MT4)

The Hub has run thirteen workshops across the State which have focused on Historical drought analysis, seasonal climate, and future climate predictions, and the application to decision making. This has included four climate yarning circles with the Ngarrindjeri Aboriginal Corporation and community to discuss climate science, climate change, and impacts on local ecology, community, and culture. The additional 9 workshops have been attended by 212 growers / pastoralists, 44 advisors / extension staff, and 15 project coordinating staff.



There has previously been little discussion on the cultural impacts of climate change to first nations communities in South Australia and the yearning circles discussions focused attention on this and assisted the Ngarrindjeri Community to identify where cultural practices are most likely to be vulnerable in a changing climate. This has started a conversation on how best to adapt Ngarrindjeri cultural practices to the changing climate. The yarning circles also highlighted the risk of reduced River Murray water flows under future climate scenarios and the need for NAC to develop a position paper on this to guide future water resource policy discussions and consultations.

The SA Drought Hub and the Landscape Boards participating in the yarning circles project have provided links between NAC, One Basin CRC, the SA Department for Environment and Water

(DEW), and the Goyder Institute's Healthy Coorong, Healthy Basin Project. Several of the priorities identified by community through the climate yarning circles present opportunities for research and funding support through these programs. DEW is now scoping a project with Flinders University to undertake research into the management of freshwater soaks which was a key issue identified by community members through the Yarning Circles. Information on climate change aspects, concerns, and questions raised in the recent yarning circles will be used to guide the project design and scope. Once developed, the project will be delivered in conjunction with NAC and the First Nations of the Southeast (FNSE).

The workshops attended by growers / pastoralists, advisors / extension staff, and project coordinating staff also had significant positive impact. Participants were introduced to Climate Services for Agriculture and a range of other climate tools and products that can assist in seasonally based decision making. Mange attendees at the events found these useful and were often unaware of them prior to the workshop.

HS2: Industry sectors are providing broad resilience and innovation support across the state

2. Output(s) Report

Outputs contributing to outcome HS2 (see Appendix C) are:

- Output 2: Outputs of innovation programs and opportunities
- Output 5: Support for access to funding
- Output 11: Co-designed Operational Plans
- Output 12: Activity Plans that incorporate aspects of co-design processes
- Output 13: Outputs from Hub governance activities conducted

3. HS2 Outcome Report

HS2 Outcome Indicators in Data Capture Plan

- Extent to which industry sectors in SA are engaged in SA Drought Hub activities.
- Alignment of SA Drought Hub activities and contribution towards industry drought resilience objectives.

Industry sectors in South Australia are strongly engaged in the Hub. Primary Producers SA (PPSA), Livestock SA, Grain Producers SA (GPSA) are all members of the SA Drought Hub and are actively engaged in the design and delivery of Hub activities. Each organisation has representation of the SA FDF Advisory Group (SA Drought Hub advisory group), Primary Producers SA has provided strategic guidance provided on the delivery of SA Drought Hub programs and integration opportunities with other large-scale programs and projects being delivered in SA. Livestock SA

has delivered joint drought and innovation projects with the Hub, supported Hub projects through resource provision, provided communications and promotion of Hub and broader FDF activities, and has guided Hub project alignment to state industry blueprint priorities. Grain Producers SA have actively supported Hub projects through resource provision, provided communication and promotion of Hub and broader FDF activities, and has guided Hub project alignment to state industry blueprint priorities, with recent discussions on joint project delivery opportunities and co-investment of projects.

The South Australian Grains industry Trust (SAGIT) have coinvested in two projects with the SA Drought Hub with SAGIT funding contributions of $582,440.

- University of Adelaide - Optimising crop establishment under dry and marginal soil moisture - Hub funding contribution towards the project, links to Hub members and network partners, project delivery support.
- Trengove Consulting - Using grain protein maps to optimise nitrogen fertiliser to paddock scale nitrogen variability - Hub funding contribution towards the project, links to Hub members and network partners, project delivery support.

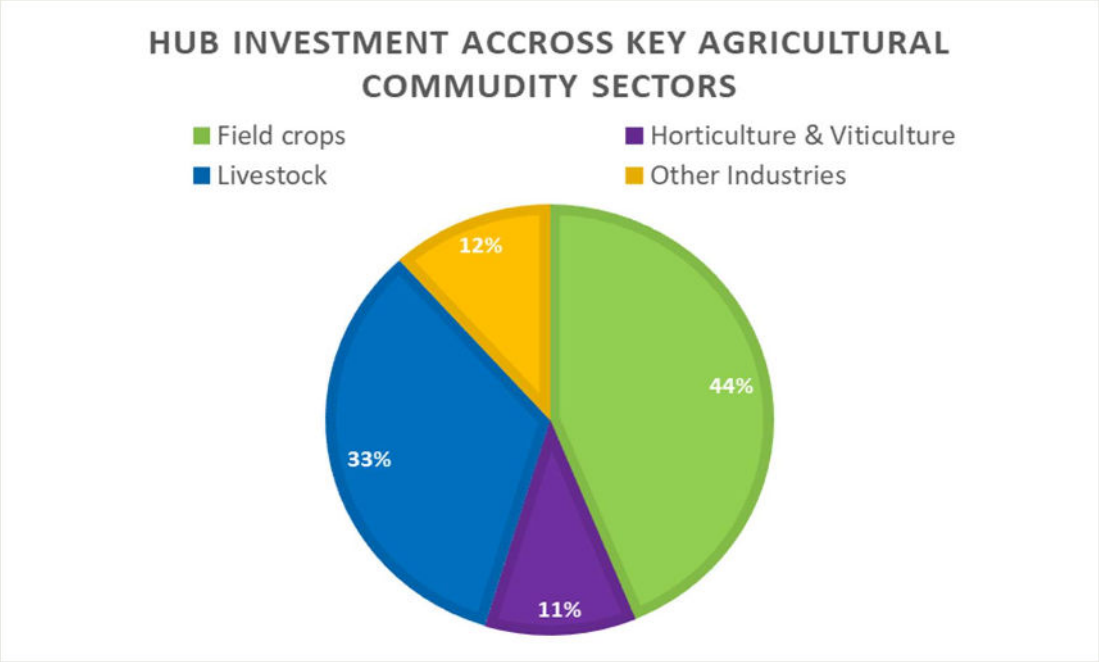
The Hub and SAGIT have also partnered to see two new regionally based intern placements supported and commencing in the 2023 / 2024 financial year. These will be based in the Mid North and on Eyre Peninsula and hosted by Grower Groups.



The South Australian Sheep Industry Fund (SIF) have contributed $325,000 towards the Hub to co-invest in a range of sheep industry projects that met identified drought Hub and Industry Blueprint priorities. Hub projects have been developed to that meet these requirements.

The priorities identified through the SA Hub co-design process and the projects being delivered all align to either the Sa Sheep industry Blueprint, SA Beef industry Blueprint, or SA Grains industry Blueprint. This is regularly reported back to the industry bodies and associated committees responsible for the delivery and administration of the blueprints.

A breakdown of Hub investment across key South Australian agricultural commodity sectors is shown in the chart below with approximately 75% of all Hub investment being targeted at the field crops and livestock sectors due to the level of exposure to drought, high proportion of the State's land area occupied by these sectors, and significant contribution to the State's GDP.



5. Methodology

The SA Drought Hub has collected data using the Hubs MEL program Participant Evaluation Survey and Member Survey. Additional questions relating to property size have been added to the Learning Activity Survey to gauge the area over which people expressing an intent to adopt changed practices may employ them. This information has also enabled the Hub to identify the scale of farm operations being represented at learning events and to tailor the events towards this. Both surveys are made available online using Jot Forms as the platform. This enables event participants to complete the survey on their smart phones, with data automatically populating a Hub spreadsheet that mimics the Data Capture Spreadsheet. The online survey eliminates the need to scan paper copies and enter data to a spreadsheet, saving considerable time, results are received and collated into a format mimicking the data capture spreadsheet making it easy to transfer the data for bulk analysis and reporting, and it enables the hub to provide event feedback to the project lead organisations and presenters in a rapid manner, usually the next day. Hard copies of the surveys are still required for

instances where there is no or limited mobile phone reception, people don't have a smart phone at the event or the phone battery is flat, and

A meetings and events record sheet is maintained by all Hub staff to record the meetings and events they attended, the audience type and number and the purpose of the meeting or event. This has been extremely useful in understanding the number of growers, extension officers, and industry people the Hub has reached and the level of awareness raising the Hub has achieved.

Project data collection is undertaken by a nominated project lead organisation through project reporting. The Hub's six-monthly project progress reports have seven sections which seek written feedback on the associated activities, and contain tables that mimic the Data Capture spreadsheet for each activity type. This allows the reports to be easily integrated to the data capture spreadsheet and provides significant narrative for use in MEL reporting. Project lead organisations only need to complete the relevant sections for the project they are delivering.

The SA Drought Hub maintains a strong regional presence through Node Coordinators, Adoption Officers, the Knowledge Broker, and Innovation Broker. This has seen strong relationships built with regionally based groups and organisations and with growers. Information fand quotes from conversations with is captures and incorporated into the reporting templates.

The seven categories in the Hub progress report are:

1. Project summary
2. Learning activities and events
3. Communications activities
4. On-Farm trails and demonstrations
5. Drought resilience tools and products
6. Commercialisation opportunities.
7. Report submission and feedback.

Feedback is sought from report users on the how they have found the report to complete, improvements that could be made, the level of awareness of the Hub, and whether the organisation would like further Hub support.

The project progress reports are made available online using Jot Forms as the platform so users can complete them quickly and easily, and data can be quickly integrated into the Data Capture Spreadsheet and other templates. The link to the progress reports is made available on the SA Drought Hub website resources page so current versions are available and can be accessed from almost anywhere by people completing them.

6. Lessons Learnt

The following are the top ten lessons learned over the duration of the SA Drought Hub but in particular, over the past 12 months:

Lesson 1. There is a high impact on the ground from projects that deliver productivity resilience and enhanced environmental outcomes, and growers are seeking these projects.

Lesson 2. Projects that span RDE&A have been effective at building collaboration between researchers, grower groups, Landscape Boards, and industry service providers at scale.

Lesson 3. The efficiency and impact from the SA Drought Hub & many other FDF programs will be maximised where there is a degree of on-the-ground coordination between the various program delivery organisations, and where this is initiated from the project planning stages as a coordinated engagement and co-design process. This is because there are common target stakeholders across the range of FDF Programs who can be engaged more effectively and efficiently when FDF program delivery are better coordinated.

Lesson 4. The Hubs provide a unique opportunity to co-design projects/activities aligned with priorities. There has been some need for coaching individuals/organisations through this process where they are primarily oriented to competitive grant rounds.

Lesson 5. The model of state-wide design and coordination across Hubs coupled with local delivery and empowerment has been highly effective in implementation of high impact activities e.g. 'time of sowing' projects and the MFMG led 'Filling Feed Gaps' project as shown in the Data Capture Plan.

Lesson 6. The ability for the Hub to add-value to existing initiatives (e.g. with RDCs) has enabled highly cost effective delivery models to be put in place. An example of this is the GRDC RiskWi$e (National Risk Management Initiative) Program where the Hub has co-invested alongside three GRDC RiskWi$e projects being delivered in SA.

Lesson7. The need for a focus on end outcome of successful adoption of drought resilience practices and not just awareness raising. This also requires capacity and capability building in extension. The Adoption Officers have been highly valuable for this in SA Drought Hub.

Lesson 8. Power and value of National network of Hubs to tackle national and or muti-hub topics whilst still retaining local engagement and delivery models.

Lesson 9. Having too many member / partner organisations in the Hub makes it difficult to find a purpose for everyone. We need to ensure every member has a meaningful role and can actively participate and contribute to Hub activities.

Lesson 10. It takes time to build trust and effective relationships and partnerships in regional communities.

Appendix A: Hub Learning Activity Survey

SA DROUGHT HUB

Learning Event Activity Survey

The feedback you provide in this survey will assist in guiding improvements of SA Drought Hub supported projects to continue to best meet local producer and adviser needs. The information will be collated with other projects from across the state to inform SA Drought Hub activity design for the continuing monitoring, evaluation and learning process of the Hub. Information will also be collated at a national level to guide improvements and future delivery of National Future Drought Fund Programs. Only data which has been de-identified will be shared with the Department.

We would like to thank you for providing this feedback as it is important to ensure the projects and events we are running are of benefit to you and your community.

Please fill out the form below and return it to your presenter
OR
Complete it online by scanniung this QR code.

Event or presenter name and date: ……

Demographics

1. What is your age?
    - 18–24
    - 25–34
    - 35–44
    - 45–54
    - 55–64
    - 65–74
    - 75–84
    - 85 and over

2. How do you describe your gender?
    - Male
    - Female
    - Non-binary
    - Other
    - Prefer not to answer
3. Are you of Aboriginal or Torres Strait Islander origin?
    - No
    - Yes, Aboriginal
    - Yes, Torres Strait Islander
    - Yes, both Aboriginal and Torres Strait Islander
    - Prefer not to answer
4. Which of the following categories best reflects your main occupation? (please pick one only)
    - Farmer/Primary producer
    - Agribusiness
    - Extension or training provider
    - Farming Systems Group/Grower Group
    - State Government
    - Local government
    - Federal Government
    - First Nations/Indigenous Group
    - Land and/or catchment management authority
    - Not for profit organisation
    - Other private business
    - Researcher/academia
    - Funding body/Rural Research and Development Corporation
    - Other (please specify)

[Questions 5 & 6 only 6 only applies to those who selected 'Farmer/primary producer'; 'Agribusiness' or 'Farming systems group/Grower group']

5. What Local Government Area (LGA) is your farm/property located in?
   If it is located across multiple LGAs, which LGA is most of your farm/property located in?
    - LGA [drop down menu – Hubs to populate with relevant options for each learning activity]
6. Which of the following categories best describes the main agricultural sector of your farm business/primary production enterprise?

If you operate across multiple industries, please indicate the main industry/sector:

- Tailored list of ANZSIC classifications [Division A Agriculture, Forestry and Fishing] down to Class (level 4) [drop down menu/list – Hubs to populate with relevant options for each activity/region as appropriate]

7. What is the size of the property or properties that you manage?

   ……..Ha or ……..Acres For pastoral Properties only ……Km2

Activity specific questions

Activity description and objective: [To be populated by the Hub, please include the method of delivery, face-to-face, online, dual-delivery, or other]

1. To what extent to do agree or disagree with the following statements:

   1.1 The content of this activity was easy to understand:

	Strongly disagree		Disagree		Agree		Strongly agree

   1.2 I would be likely to consult/use the materials provided again:

	Strongly disagree		Disagree		Agree		Strongly agree

   1.3 I would be confident in sharing your new skills and knowledge with peers:

	Strongly disagree		Disagree		Agree		Strongly agree

   1.4 The content of this activity was relevant in helping me to prepare for, or respond to, future drought:

	Strongly disagree		Disagree		Agree		Strongly agree		Too early to say

   1.5 The content of this activity was relevant to my needs:

	Strongly disagree		Disagree		Agree		Strongly agree

2. Please explain briefly why you feel this way/why you think this?
3. As a result of this activity, I am likely to make a practice change, or consider making a practice change:

	Strongly disagree		Disagree		Agree		Strongly agree		Too early to say		Not applicable

4. What are some of the practice changes you are considering making as a result of this activity? (Tick all that apply)
   - Hub to populate list with relevant practice changes and new technologies
5. What would you change about this activity to make it more effective or relevant (if anything)?
6. Do you have any additional comments that you would like to make?

Appendix B: Hub Members and Partners Survey



Member and Partner Survey

This survey is intended for the South Australian Drought Resilience Adoption and Innovation Hub **consortia members and partners**– all parties receiving FDF funding and/or making co-contributions to each Hub.

The purpose of this survey is to gain insight into the collaborative effort and efficiency of the Hub.

Survey responses will be de-identified, and that de-identified data will be reported to the Department of Agriculture, Fisheries and Forestry (DAFF)as part of our regular reporting process.

This survey has 13 questions and should take no more than a ten minutes to complete. The information will be used to identify where improvements can be made to the Hub's governance and management structures, and program and project delivery mechanisms. The information will also assist in understanding the areas and activities you feel the Hub should focus on.

Thank you for taking the time to complete this survey. It will provide us with important information to guide improvements to the delivery of the SA Drought Hub and the outcomes achieved.

Please select which Hub you are associated with:

- South Australia

1. Briefly describe your role in the Hub:
    - Hub Member
    - Hub Network Partner
    - Project lead (Project Lead Organisation)
    - Hub Collaborator

- South Australian FDF Advisory Board (Board Member)
- Stakeholder Advisory Group Member (RDE&A Committee member)
- Institutional Management Committee (IMC) (Hub steering committee)
- Hub or Node employee
- Other, please specify

2. Briefly describe your level of involvement in delivering Hub activities (e.g., full-time or part-time on Hub activities).

3. How satisfied are you with the opportunities to ask questions about the Hub priorities and planned activities?

	Very dissatisfied		Dissatisfied		Satisfied		Very satisfied

4. How satisfied are you with the opportunities to provide your thoughts and inputs on the Hub priorities and planned activities?

	Very dissatisfied		Dissatisfied		Satisfied		Very satisfied

5. How satisfied are you with the extent to which your input is valued and ultimately influences Hub priorities and planned activities?

	Very dissatisfied		Dissatisfied		Satisfied		Very satisfied

6. How satisfied are you with the day-to-day functioning of the Hub?

	Very dissatisfied		Dissatisfied		Satisfied		Very satisfied		I'm not involved in the day-to-day functioning of the Hub

7. Please provide any additional comments on the how the current collaboration and partnerships are functioning:

8. Please provide any additional comments on what you think could be improved in the Hub's governance processes:

Appendix C: List of Outputs for Reporting

1) Outputs Common Across All Hubs

Output 1: Knowledge[1] development and sharing (products[2] developed from)

Indicators in Data Capture Plan

1.1 Knowledge sharing/resource platform is implemented (if relevant).

The SA Drought Hub has continued to develop our website which contains key information on the staffing and structure of the Hub, members and partners, key resources, news, information on projects, node locations, and staff contact details See: sadroughthub.com.au., The website is being updated regularly with resources being added as they are developed or become available.

The Hub also produces a monthly e-newsletter which is distributed to 391 subscribers and enjoys a >50% open rate. The newsletter content includes information / summaries on Hub projects and project opportunities, upcoming events, grant opportunities, information on other FDF programs being delivered in SA, announcements such as staff recruitment.

Overall, there are good levels of subscription and information access across the Hub's social media accounts. The Hub hosts an active social media account on Facebook, X, Instagram, and Twitter. Data for each platform is provided in the data capture spreadsheet with total metrics being 905 posts to 248 followers reaching 49,647 users. The number of followers increased on all platforms since December 2022 and in particular an Instagram (86% increase) and LinkedIn (51% increase) due to these accounts only being established in November 2022.

Hub staff have liaised with a range of stakeholders on drought resilience material that exists across a range of websites. This material has been compiled, reviewed and considered for inclusion in an online Drought Resilience resource-based website for use by producers and advisors. There has been some hesitation on commencement of this work due to uncertainty on the fate of the National Drought Resilience Information System (DRIS) and a desire to not duplicate this work should it proceed Now there has been a clear indication given that DRIS will not proceed, we are moving forward with the development of the website. Once completed, this site will also house technical reports and fact sheets, podcasts and videos produced as part of Hub projects and initiatives as well as other FDF programs.

[1]Knowledge for this purpose is more than information. It is about a product that builds the capacity/skills of the user in a specific topic related to future drought resilience (e.g. a factsheet dedicated to showing how to reduce/control dam evaporation).

[2]Product is something tangible.

The Hub hosts all internal documentation on an access only basis (invite) within Teams. This enables efficient document handling and tracking between staff members who hosted by different organisations (University of Adelaide, Ag Excellence Alliance, Department of Primary industries and Regions SA)

1.2 Number and type of knowledge resources developed and shared.

The Hub developed and shared 34 knowledge and information resources across the 2022 / 2023 financial year. This included technical reports, podcasts, videos, case studies, fact sheets, information sheets, and newsletters. These are detailed in Output 15 of the Data capture Spreadsheet.

1.3 Number of users utilising the knowledge sharing/resource platform.

The SA Drought hub website had 1642 users, 4814 page views, with an average engagement time of 1m 20s.

The 34 knowledge and information resources developed and shared by the Hub were received and viewed by more than 3000 people collectively (see outcome 15 in the data capture spreadsheet).

Output 2: Outputs of innovation programs and opportunities

Indicators in Data Capture Plan

Gaps in existing drought resilience knowledge and practices[3] identified and prioritised by stakeholders: number of stakeholder consultations, stakeholder category, type of needs identified, region etc.

The gaps in existing drought resilience knowledge and practices identified through the initial Co-design process were across all aspects of drought resilience: Community, economic, management, agronomic and environmental. The initial SA Drought Hub co-design consultation process captured 991 ideas for building drought resilience and current knowledge gaps, and these were ordered into 10 themes as listed below:

1. Community resilience and wellbeing through support, collaboration, and access to technologies
2. Farm planning and decision making to manage climate and operational risk
3. Farm business management
4. Livestock and fodder management strategies, technologies, and innovations
5. Crop and pasture management strategies, technologies, and innovations

[3] Practice is the act of doing something regularly.

6. Access to drought information and technical support
7. Soil and land management strategies, technologies, and innovations
8. Water security and management strategies, technologies, and innovations
9. Native vegetation, biodiversity, pest management strategies, technologies, and innovations
10. Upskilling advisers, researchers, and key influencers

The full Node Co-Design Workshops Report provides a description of each theme, lists each of the 991 ideas received, lists the priority ideas identified for each of the SA Drought Hub Nodes, and provides participant feedback on their enterprise and exposure to drought.

The report can be found on the resources page of the SA Drought Hub Website Resources Page at https://sadroughthub.com.au/resources

Since these initial consultations the Hub has established Stakeholder Advisory Groups (SAGs) in each of the 5 nodes and at the Central Hub. These groups are made up of representatives from local Hub member organisations and farmers / producers, and serve to bring community ideas through the Nodes to the Hub for consideration, identify and link project partners and community members into hub projects, and to assist hub Staff with the design of projects to best meet local community needs. The SAGs meet as required throughout the year to compliment the timing of local production systems and the delivery timeframes of projects and other Hub initiatives. To date there have been 10 SAG meetings conducted across the Hub with many more email communications between members.

Additionally, the Hub has engaged in ongoing discussion and consultation with the grains, livestock, wine, and horticultural industries in SA through State peak Industry bodies, RDCs, and industry funds to align Hub projects with relevant industry priorities as identified in industry blueprints and other strategic documents. The Hub has co-invested in projects with these organisations where there is alignment of Hub priorities as defined through community and SAG consultation.



2.2 Extent to which Hub has identified opportunities and worked to address gaps through its co-design processes.

The SA Drought Hub has engaged with several organisations over the past twelve months who were not well represented during initial consultation and co-design processes. This includes Dairy SA, SA Dairy Industry Association, the Landcare Association of SA, Ag Bureaus SA, and Rural Business Support. Discussions with these organisations have identified priorities that align between the organisation and the Hub and have sought opportunities for co-investment and or co-delivery of projects to address these priorities.

The Hub has continued to engage with partner organisations to identify new and emerging drought resilience priorities and issues and those that weren't identified in the initial consolations. We have consulted on Hub operational and administrative processes through the Hub member survey and a workshop held with SA Grower Groups and made improvements where possible. Some of the changes proposed are not possible to employ at this later stage of the current iteration of the Hub but will be employed should the Hub be funded for a second round.

Hub member organisations continue to put new and emerging project ideas forward and these are discussed in the context of the priorities that have been collectively identified by the Hub members and local producers.

Supporting question

1. Please explain what co-design means to the Hub and how the Hub approaches co-design.

Co-design sits at the heart of the SA Drought Hub and is employed in the design and delivery of Hub projects and activities. In the SA Drought Hub, co-design is the process of bringing Hub members, stakeholders, and end users together to contribute to the design and implementation of the projects and activities that the Hub delivers. This ensures engagement and relevance to end users, industry participants, researchers and other service providers and increases opportunities for technology and practice adoption on farm.



The SA Drought Hub took the priorities identified in each of the Hub Nodes through the co-design consultations and worked collectively with Hub Members to codesign projects that recognise and add value to past and current investments, are tailored to local farming systems and

environmental conditions, engage local and regional stakeholders in the design and delivery of projects, and are of the highest priority to local end users. This process was undertaken through a series of online workshops (due to COVID requirements at that time) to identify the priorities in each node arising from the co-design consultations and to have a discussion on the opportunities for project design and delivery. Since this initial planning period, identified priority projects have been developed and delivered on the ground. This has primarily been through the South Australian Grower Group Network to ensure specific, targeted, and localised project development with relevance to local end users and meeting the principles outlined above. Whilst a range of projects have been implemented, the co-design process remains ongoing and fluid to ensure emerging priorities can be addressed along with those initially identified across the Hub network. This is reflected through the suite of 2023 projects which build upon the projects initiated in 2022 to be better nuanced and meet local producer needs in the regions they are being delivered.

The Hub oversees delivery of some Statewide projects. Whilst these have a common theme which is addressed across the entire project footprint, the method of delivery and specific on ground design is tailored to local environmental conditions and farming systems to meet local end user needs, expectations, level of awareness, knowledge and confidence.

Co-design isn't limited to within the SA Hub, and takes place on several cross Hub projects and new initiatives involving multiple Hubs and their partners. In all cases the principles outlined above are employed to ensure relevance to local producer identified priorities, needs and preferred engagement approaches.

Output 3: Outputs of innovation programs and opportunities (specific to First Nations communities)

Indicators in Data Capture Plan

3.1 Gaps in First Nations' knowledge and practices identified (in relation to resilience to future droughts).

The SA Drought Hub undertook consultation with the Ngarrindjeri Aboriginal Corporation (NAC) to determine where gaps in drought knowledge might exist. This community was impacted enormously by the Millenium Drought between 2007 and 2010 when water resources in the Lower Murray Lakes dried up, causing laker bed acidification and a dramatic loss of habitat and wildlife. Discussions revealed that NAC members had limited understanding of the impacts of climate change on the local environment and how this would be exacerbated by future droughts.

3.2 Gaps in stakeholder's knowledge about First Nations' knowledge and practices identified (in relation to resilience to future droughts).

SA Drought Hub partners, the Murraylands and Riverland Landscape Board, Hills and Fleurieu Landscape Board, Limestone Coast Landscape Board and Kangaroo Island Landscape Board were developing a three-year Climate Resilience Project which engaged NAC rangers and community members to undertake environmental monitoring programs and employ projects to build ecological resilience to climate change in the Lower River Murray, lakes and Coorong region. The Landscape Boards and NAC not only had a knowledge gap in identifying the likely impacts of climate change on local ecological features, but also the priority in which the identified impacts

should be addressed to best conserve ecological, community and cultural aspects of the landscape.

3.3 Opportunities to address identified gaps (a and b above) through co-design processes.

The SA Drought Hub partnered with NAC and the Landscape Boards to add a yarning circles component to the Climate Resilience Project. This saw community members come together to be presented information on the local impacts of climate change in relation to average and drought years by a climate scientist and local ecologist through a series of four climate yarning circles.

Rather than a presentation, the format was conversational where community members were engaged in a two-way discussion on historical, recent, and future climate change, and encouraged to identify how they thought the climate change scenarios being presented would impact on significant species and areas, the broader environment, and cultural practices. Community members identified a range of environmental and cultural impacts then ranked these to prioritise and guide the works program in the three-year Climate Resilience project.



3.4 Extent to which opportunities identified through First Nations co-designing processes (c above) are incorporated into activities.

A total of 48 Ngarrindjeri Community members participated in the four climate yarning circles. The priorities identified will be used for the identification of key projects and the prioritisation of these in the Landscape Board and NAC Climate Resilience project.

There has previously been little discussion on the cultural impacts of climate change to first nations communities in South Australia and the yearning circles discussions focused attention on this and assisted the Ngarrindjeri Community to identify where cultural practices are most likely to be vulnerable in a changing climate. This has started a conversation on how best to adapt Ngarrindjeri cultural practices to the changing climate. The yarning circles also highlighted the risk of reduced River Murray water flows under future climate scenarios and the need for NAC to develop a position paper on this to guide future water resource policy discussions and consultations.

The SA Drought Hub and the Landscape Boards participating in the yarning circles project have provided links between NAC, One Basin CRC, the SA Department for Environment and Water (DEW), and the Goyder Institute's Healthy Coorong, Healthy Basin Project. Several of the priorities identified by community through the climate yarning circles present opportunities for research and funding support through these programs. DEW is now scoping a project with Flinders University to undertake research into the management of freshwater soaks which was a key issue identified by community members through the Yarning Circles. Information on climate change aspects, concerns, and questions raised in the recent yarning circles will be used to guide the project design and scope. Once developed, the project will be delivered in conjunction with NAC and the First Nations of the Southeast (FNSE).

There is interest in the climate yarning circles from other Aboriginal groups in South Australia and in particular from the Upper Muray River.

Output 4: Scholarships

Indicators in Data Capture Plan

4.1 Number, dollar value range and impact area of scholarships (or similar output) (by category of scholarship and type of recipient) funded by the Hub.

Two 12-month internships focusing on the grains industry have been directly supported by the SA Drought Hub, with both employed through hub member organisations, The Hart Field site group and the South Australian Research and Development Institute (SARDI). Through the internship programs, interns are able to build skills across trial design and analysis, field assessments, evaluation, crop management and operational activities including seeding and harvest. Both interns are grains industry focused are work alongside industry groups, grower groups and producers to build their knowledge and experience in real world farming situations.

A short term (12 week) intern is supporting the evaluating wheat germplasm demonstration site being conducted at the University of Adelaide's Roseworthy Campus. A PhD student is also engaged in this project to look at the mechanisms behind the enhanced growth in some wheat populations.

125 undergraduate students from a range of agricultural disciplines are using a Hub drought resilience learning and study site as part of their undergraduate subjects.

Supporting question

1. Please provide any available details about the more notable impacts of the scholarships on the recipients to date.

The Hart Field Site intern has designed and implemented a field project focusing on the drought resilience theme of seeding decisions. A small trial was designed to compare the establishment of three wheat varieties with varying coleoptile lengths at three seeding depths to: 1) Compare germination and establishment of wheat at two times of seeding and 2) Reduce the risk of dry seeding into marginal moisture through variety selection and sowing depth. The intern is responsible for all components of the trial and will share key findings through her communications project and Hart's 2024 Getting the Crop In Seminar. The intern Implemented a small video series 'Harriet's Hart

Headlines'. Through this activity the Intern developed a communications strategy and identified content, frequency, and target audience. This video series is aimed broadly at Hart members (including growers, advisors, and industry) to provide brief updates on a number of projects at Hart Field Site. The first video has been released with 2 – 3 consecutive videos planned. Videos are posted on Hart social media platforms (Facebook, Twitter) and are available to view at: Hart Field Site Group - Harriet's Hart Headlines

Quote from hart Field Site Research Coordinator - "The beauty of this internship is that research options can be tailored to meet the successful applicant's specific interests in a supported environment, working alongside the Hart research and extension manager. The successful applicant also plays an important role in the preparation of Hart's feature events including the Getting the Crop In seminar and the annual Hart Field Day."



The SARDI Intern has provided support to a wide range of SARDI projects being undertaken across the state. The Intern has developed an interest in legumes and the application of these as economic break crops in grains farming systems. This includes the drought risks and opportunities that growing legumes in low rainfall environments pose. To support this, the intern has completed a pot trial using two soils types from low rainfall Mallee districts of SA to validate findings of previous legume break crops trial in different soil type trials, and have established a small field trial with lentils and peas to learn how to establish and run a field demonstration trial and to interact with Grower Groups and farmers involved in the trial. A crop walk will be held later in 2023 with the Intern involved in organizing the day. The Intern has also developed drafts of a series of break crop factsheets explaining break crops and pulses benefits and risks for SA's low rainfall zone. This includes lentils, field pea, faba bean, vetch, chickpea, lupin and canola. A workshop is proposed for later in 2023 to showcase the factsheets and for the intern to learn to organize and facilitate meetings targeted at farmers.



A PhD student and short term (12 week) third year undergraduate intern worked on the evaluating wheat germplasm demonstration site being conducted at the University of Adelaide's Roseworthy Campus. Both have been engaged in the project to look at the mechanisms behind the enhanced growth in the some wheat populations, and this will form part of the overall assessment on the over 600 germplasm being evaluated for drought resilience traits.

The Roseworthy mixed species pasture drought resilience learning and study site has been established to integrate drought resilience leaning into the University of Adelaide's undergraduate program for agricultural students. To date there have been 125 students and 10 lecturers using the site as a field based study site to compliment theoretical learning. Many more students are expected to use the site over the coming months.

The SA Drought has significantly expanded the intern program in partnership with the SA Grain Industry Trust (SAGIT) and key grower groups in South Australia. This will see the employment of two additional interns in the 2023/2024 financial year, with the positions based regionally to support SA Drought Hub, FDF Grant, RDC and industry funded drought resilience projects. Whilst these positions won't commence until early 2024, funding has been secured and planning for employment has commenced.

Output 5: Support for access to funding

Indicators in Data Capture Plan

5.1 Number and type of organisations that have received support, advice etc. from Hub to access funding relevant to the program (e.g. grant funding).

A total of 26 new grant applications were supported by the SA Drought Hub with most applications greater than $500,000. The total number of organisations directly supported and /or provided advice to access funding relevant to the Hub program exceeds 40 and includes Landscape Boards, Grower Groups, community organisations, Aboriginal organisations, research providers, Regional Development organisations, and local government.

Support for FDF Grants currently being delivered.

- FDF Innovation Grants: Innovation, Proof of Concept and Ideas grants – Provided links to Hub networks and contact points within regional communities, discussions with project leads to identify opportunities to link Hub activities and complement the grant delivery activities.
- FDF Soils and Land Management Grants: Provided links to Hub members and networks, sat on project community of practices to identify opportunities to link Hub activities and complement the grant delivery activities.

A summary of Hub support for the 26 new grant applications is provided below for several key grant programs.

Methane Emissions Reduction in Livestock (MERiL) program

- University of Adelaide with 9 partner Organisations -. investigate feeding seaweed supplements to pregnant cows and its long-term effect on methane production in their progeny - Builds from a pilot program supported by the Hub's Innovation Program, provided letter of support supported network development and provided contacts.

Long-term Trials of Drought Resilient Farming Practices Program

- University of Adelaide – Enhancing drought resilience of low to medium mixed farming systems in South Australia - Hub designed and developed application in partnership with collaborators, linked partners to the project, supported project network development.
- University of Adelaide – Managing soil acidity for drought resilient soils – provided letter of Support, provided advice on grant program.
- Kangaroo Island Landscape Board with 7 partner organisations - SA Farming Practices that Improve Drought Resilience through Soil Health: A collaborative co-designed state-wide network of Farm Labs delivering long-term trials – provided letter of Support, provided advice on grant program.
- Flinders University with 39 partner organisations - Innovative applied science to improve the climate resilience of cropping, livestock, and mixed farms, assessed through a network of long-term trials across the pastoral, low, medium, and high rainfall zones of SA – provided letter of support.

- Deakan University with 10 partner organisations- Investigating diversity in pastures to build resilience and support 365 days of feed production in southern temperate grazing enterprises – provided letter of support, provided network contacts.
- MacDoch Foundation with 4 partner organisations - long term trials for building drought resilience through innovative approaches to farming practices – provided letter of support.

Extension and Adoption of Drought Resilience Practices Grants

- University of Adelaide - Alternate end uses for drought stressed grain crops in South Australia – Hub designed and developed application in partnership with collaborators, linked partners to the project, supported project network development.
- Southern Farming Systems - Accelerating the adoption of livestock containment systems in Southern Australia to build business – co-developed the application, network contacts, linked partners to the project.
- Controlled Traffic Farming Association – Adoption of Controlled Traffic to increase Drought Resilience. – Advice on the grant parameters, Links to groups and Hub Networks, Provided letter of Support
- AgExcellence Alliance - De-risking the seeding program: adoption of key management practices for the success of dry and early sown crops - Advice on the grant parameters, Co-development of the application, Links to groups and Hub Networks in SA and other Hubs, Provided letter of Support.
- SA Arid Lands landscape Board - Measuring Macropods for Rangelands Resilience – Provided letter of Support.
- Australian Wildlife Service - Integrating kangaroos into farm / pastoral industry practice to improve drought resilience and meet total grazing pressure goals – Provided letter of support.
- State and Territory Landcare organisations (STLOs) and National Landcare Network (NLN) - Landcare Drought Resilience Officers and drought resilience adoption grants Advice on the grant parameters and guidance on eligible activities, letter of support
- Northern and York Landscape Board - Solutions in practice: adopting pathways to resilience –linked Hub network partners into the application, advice on the application content, letter of support.
- Pastoral Collective - Adoption of Existing Technology & Management Practices in SA Pastoral Lands – Grant application support and guidance, letter of support
- University of Adelaide - Breaking the knowledge drought: supporting productivity, profitability and longevity of perennial horticulture crops through drought-resilient decision making – assisted application writing, linked Hub network partners into the application, letter of support.
- Northern Western Australia and Northern Territory Drought Resilience Adoption and Innovation Hub (Northern Hub) – Range Mates – assisted with the application, engaged Hub network and partners in the project, letter of support.

- Mallee Sustainable Farming - Building farming systems resilience and future proofing the impacts of drought through accelerating the adoption of cost-effective and yield responsive soil and fertiliser management practices and technologies by farmers across southern Australia – brought stakeholders together, provision of advice on grant application, linked Hub Network into the application, letter of support.
- Farmers2Founders - F2F TEKFARM™ - accelerating the adoption of drought resilience technologies for the application being submitted for the Future Drought Fund Extension and Adoption of Drought Resilience Farming Practices Grants Program. – Hub is a co-partner in the application, provided information to guide the application, engaged Hub network and partners in the project, letter of support.
- Wheatbelt NRM - Variety is the spice of life: Increasing uptake of integrated legume cereal crop systems - engaged Hub network and partners in the project, letter of support.

MLA Precision Sheep Management Tender

- University of Adelaide - Unlocking the potential of precision sheep management to improve weaning rates and growth rates – Provision of supporting information for the application, engaged Hub network and partners in the project, letter of support.

Landscape Priority Fund

- Murraylands and Riverland Landscape Board with 10 partner organisations - Building the resilience of Ngarrindjeri Yarluwar-Ruwe – Provision of supporting information for the application, engaged Hub network and partners in the project, provided a letter of support.

South Australian Grains industry Trust (SAGIT)

- University of Adelaide - Optimising crop establishment under dry and marginal soil moisture Hub funding contribution towards the project, links to Hub members and network partners, project delivery support.
- Trengove Consulting - Using grain protein maps to optimise nitrogen fertiliser to paddock scale nitrogen variability - Hub funding contribution towards the project, links to Hub members and network partners, project delivery support.

Northern and York Landscape Board Small Grants Program.

- Barossa improved Grazing Group - Mixed Species Pastures Demonstration Sites - Hub funding contribution towards the project, links to Hub members and network partners, project delivery support.

5.2. Total value of funding received.

Methane Emissions Reduction in Livestock (MERiL) program,

$1,075,601 - University of Adelaide – investigate feeding seaweed supplements to pregnant cows and its long-term effect on methane production in their progeny

Long Term Trials

$8,000,000 - Flinders University - Innovative applied science to improve the climate resilience of cropping, livestock, and mixed farms, assessed through a network of long-term trials across the pastoral, low, medium, and high rainfall zones of SA – provided letter of support.

$7,994,500 - Deakan University - Investigating diversity in pastures to build resilience and support 365 days of feed production in southern temperate grazing enterprises – provided letter of support, provided network contacts.

Extension and Adoption of Drought Resilience Practices Grants

$1,737,000 - AgExcellence Alliance - De-risking the seeding program: adoption of key management practices for the success of dry and early sown crops - Advice on the grant parameters, Co-development of the application, Links to groups and Hub Networks in SA and other Hubs, Provided letter of Support

$2,985,000.00 - Farmers2Founders - F2F TEKFARM™ - accelerating the adoption of drought resilience technologies for the application being submitted for the Future Drought Fund Extension and Adoption of Drought Resilience Farming Practices Grants Program

$840,000 - Mallee Sustainable Farming - Building farming systems resilience and future proofing the impacts of drought through accelerating the adoption of cost-effective and yield responsive soil and fertiliser management practices and technologies by farmers across southern Australia

Landscape Priority Fund

$480,000 Murraylands and Riverland Landscape Board - Building the resilience of Ngarrindjeri Yarluwar-Ruwe

South Australian Grains industry Trust (SAGIT)

$449,239 - University of Adelaide - Optimising crop establishment under dry and marginal soil moisture

$133,201 - Trengove Consulting - Using grain protein maps to optimise nitrogen fertiliser to paddock scale nitrogen variability

Northern and York Landscape Board Small Grants Program.

$10,000 - Barossa improved Grazing Group - Mixed Species Pastures Demonstration Sites

TOTAL - $23,704,541

Support for each of the successful grant applications listed above has included a mix of:

- Hub resource provision,
- linking the projects to other FDF programs on the ground,
- providing SA Drought Hub presentations, workshops and other content to value add to events,
- Participation on project steering committees
- provision of collaborative and value add opportunities as appropriate,
- Hub staff support for delivery of the project
- Providing connections and links to Hub members and Network Partners as required to assist project delivery.

- Promotion of the project events to Hub members, Partners, and the broader Hub network.
- Extend information, materials and products created through the project to Hub members, Partners, and the broader Hub network.
- Provide information and networking support to SA Hub members and Network Partners involved in the project.

Output 6: MEL Plans – baseline data provided and monitoring data being provide on an annual basis.

N/A - Outputs and activities being reported via progress report, this document and annual provision of data.

Output 7: Learning activities to support resilience with end users and those who support end users (and associated products)

Indicators in Data Capture Plan

7.1 Number of learning activities by:

- type (farm visits, seminars, workshops etc.).
- focus area (e.g. risk practices and other resilience technologies and practices).
- number of participants/attendees with associated demographics (e.g. location, industry, farm type, number etc).

There were 78 learning activities undertaken as listed in the Data Capture spreadsheet. Most of these were delivered through SA Drought Hub member organisations as part of project activity delivery in SA regional areas. These events were supported and attended by the Hub node coordinators where possible.

- 30 Farm Visits
- 11 field days
- 30 workshops
- 3 farmer bus tours
- 2 seminars
- 1 conference
- 1 forum



Total attendance across all events was 2,156 people and includes 1,672 farmers / producers / pastoralists, 214 farm advisors / farm consultants, 154 project and government extension staff, 69 grower groups / farmer groups, 38 researchers and students, and 9 Knowledge Brokers.

The focus areas of the events varied greatly to meet regionally specific issues and topics that were prioritised through the Hub's co-design process. Key themes were improved crop and livestock management to increase drought resilience, planning for the impact of drought and climate change, water security on farm, seasonal planning, and soil management to increase drought resilience. A full list of completed events with attendance records for each event is provided in the data capture spreadsheet.

7.2 Number, type and focus type of training activities conducted specifically for those who support end users, and participant number and type.

A bus tour was undertaken by 15 researchers from the University of Adelaide to the South East of SA to look at a range of drought resilience projects including some supported by the SA Drought Hub. The researchers on the tour visited commercial farms and discussed farmer needs with the owners and managers to gain an understanding of industry needs in the area of drought resilience. These discussions have since assisted in guiding research design.

The Hub led two Climate Services for Agriculture and DR SAT training sessions which were conducted in Adelaide and Port Augusta for project extension staff. workshops had a dual purpose: 1) to train extension staff in the operation and application of these tools so that they can train farmers, and 2) to provide feedback to the developers of each program on where improvements could be made to make the tools more easily usable to farmers. The Adelaide workshop had 15 attendees and the Port Augusta workshop had 10 attendees.



A student group of 23 agricultural students from the University of Adelaide visited a commercial farm where Drought Hub demonstration sites have been established for the purpose of introducing the students to commercial trails and the projects being conducted to build drought resilience in SA.

125 undergraduate students from a range of agricultural disciplines are using a Hub drought resilience learning and study site as part of their undergraduate subjects. The Roseworthy mixed species pasture drought resilience learning and study site has been established as a field based study site to compliment theoretical learning and integrate drought resilience leaning into the University of Adelaide's undergraduate program for agricultural students and their lecturers. Many more students are expected to use the site over the coming months.

7.3 Quality, relevance and learning gained through training activities.

See above in 7.2 and the highly complementary results from learning event surveys displayed in output 11 and short term outcome (ST5).

7.4 Products developed for or from learning/training activities (if applicable).

A range of products were developed for or as a result of Hub supported learning and/or training events. These include workshop materials, field day handouts with information on demonstration sites, videos, podcasts providing an overview of a project and complimentary to workshop, and case studies used as examples during workshops. Many of these are listed under output 15 on the Data Capture Spreadsheet. Whilst we do not have exact numbers of these, most workshops, field days and other training events have event specific products developed to assist learning. Where relevant, these materials have been made available for people to access via group websites and other media.



Output 8: Products from co-designed activities to support First Nations engagement and knowledge

Indicators in Data Capture Plan

8.1 Activities delivered to support knowledge in First Nations and from First Nations (by number and type).

The SA Drought Hub participated in 11 project meetings to identify First Nations knowledge gaps in the Hub and drought and climate knowledge gaps in First Nations communities, discuss opportunities for collaboration and engagement with First Nations communities.

The Hub supported four climate yarning circles with the Ngarrindjeri Aboriginal Corporation (NAC). These were conversational in their approach, with community members engaged in a discussion with a climate scientist and ecologist on historical, recent, and future climate change, and encouraged to identify how they thought the climate change scenarios being presented would impact on significant species and areas, the broader environment, and cultural practices. Community members identified a range of environmental and cultural impacts then ranked these to prioritise and guide the on-ground works program in a three-year Climate Resilience project. A full summary of the climate yarning circles project is provided in Output 3.



The Hub initiated and led an on-country visit to a native plant establishment research site to look at opportunities to support native plant regeneration and establishment.

SA Drought Hub staff involved in First nations project delivery attended two NAC run training courses to increase knowledge of First nations culture and displacement. The training courses were run by NAC with the first: the Aboriginal history of SA which focused on displacement of Aboriginal peoples, taking of land and resources, and illegalities of colonization. The second training event was Ngarrindjeri cultural training. This included country visits to discuss significant areas and environmental aspects of the landscape. These courses were attended by 47 and 18 people respectively.

8.2 Engagement with First Nations community members (by number and type).

A total of 48 Ngarrindjeri community members attended the four climate yarning circles. This included 42 general community members, 5 Aboriginal Rangers, and one researcher.

Engagement in project meetings has predominantly been with NAC staff and Board members who also attended the yarning circles.

The Hub engaged the First Peoples of the River Murray and mallee Working Group to discuss undertaking a series of yarning circles in the Riverland region. The 10 group members were very interested in the idea and wanted to have further discussions. These are scheduled for later this year.

The Hub met with one first nations researcher undertaking investigations of native plant regeneration and establishment techniques. This was an on-country visit to the research site.

8.3 Quality, relevance and learning gained through training activities.

See discussion on the 4 climate yarning circles and the Quality, Relevance and Learning attained through these described in Output 3.

The Aboriginal History of SA and Ngarrindjeri Cultural training undertaken by Hub staff was very relevant to the Hub's work with NAC and the broader Ngarrindjeri community. It provided context

and understanding of cultural practices and importance of certain areas and environmental attributes and helped to deliver the yarning circles project in a more culturally sensitive and meaningful way.

Supporting question

1 Please provide an overview of any products developed, adapted and/or used to support First Nations engagement and knowledge (e.g. decision tools, information sheets, fact sheets).

Climate charts were produced for each of the four climate yarning circles. These provided the average temperature for each month since temperature records had been collected from local Bureau of Meteorology (BOM) weather stations (often 100 years or more). Each month and year were ranked into deciles. This highlighted the trend towards increasing temperature over the past 20 to 30 years. The trend of increasing temperature was uniform at each of the four weather station sites where data was taken: Goolwa, Meningie, Strathalbyn and Murray Bridge The same was undertaken for rainfall. There was no discernable trend or pattern in rainfall across the years that the data was presented, and this was in line with climatic predictions for the region.



This information helped guide the conversation on climate change and the associated impacts and was used to demonstrate the increasing temperature trend and the likelihood that future droughts will be exacerbated by this. This prompted discussion on the likely impacts on culture, community and the environment and what the community could do to address these.

Output 9: Hub communication activities plans and products

All Indicators have been recorded in the data capture Plan. A total of 93 communications activities and products were delivered, and this included newsletters and articles within them, Media releases and interviews, social media posts, videos, fact sheets, podcasts, and trials results compendiums and booklets.

Indicators in Data Capture Plan

- Number and type of communication activities and products.
- Coverage and uptake of communication activities and products including:
  - # of newsletter subscribers
  - newsletter open and click rates
  - website visitor stats (including numbers and time on page)
  - social media follower counts, and engagement data
  - media hits
  - event attendance and feedback
  - other metrics as required (e.g. survey results).

Output 10: On-farm trials and demonstrations to build drought resilience

Indicators in Data Capture Plan

10.1 Number and type of on-farm trials and demonstrations of drought resilient practices conducted.

The SA Drought Hub has established 54 on-farm demonstration sites across 20 projects in the 2022/2023 financial year. The focus of these sites is mixed farming, cropping and rangeland livestock production. All On Farm Trials and Demonstrations are displayed in the Data Capture Spreadsheet.

10.2 Number of farmers/primary producers that participated in on farm trials and demonstrations of drought resilient practices.

A total of 52 commercial farms and 2 research farms hosted on farm trials and demonstrations.

A total of 654 farmers visited the on-farm trial and demonstration sites (624 between July and December 2022 and 30 between January and June 2023).

Importantly there were 221 advisors, consultants, government Extension officers, project officers and grower group staff who also attended the sites and are able to share the knowledge gained with their client and member networks.



10.3 Relevance and learning from on-farm trials and demonstrations.

All on-farm trials and demonstration sites align with the co-designed priorities identified through each of the Nodes. This ensures relevance to local producers from across different regions in SA and alignment to local grower group priorities which in turn increases the amount of attendance at the on-farm trial and demonstration sites. Comments from producers are captured in the Learning Activities Survey responses in the data Capture Spreadsheet.

In response to the question "*The content of this activity was relevant to my needs*" 95 % of the 307 respondents answered strongly agree (46) or agree (246). Furthermore, in response to the question "*the content of this activity was relevant in helping me to prepare for, or respond to, future drought*", 90 % of the 308 respondents answered strongly agree (34) or agree (243). When learning activity participants were asked if they *'would be confident in sharing your new skills and knowledge with peers'* 89% of the 307 respondents answered strongly agree (30) or agree (242). 28 people disagreed and 6 people felt the question was not applicable to them.

Whilst not all responses are related to attendance at field trials and demonstration sites, many are, and there is an overall high level of agreeance that Hub activities are relevant to participant needs, helping people prepare for drought, and providing the confidence to share what they have learned with their peer.

Supporting question

1 What feedback has the Hub received from farmers/primary producers on the relevance and lessons learned from on-farm/on-property trials and demonstrations?

Feedback from end users and SA Drought Hub Members and Network Partners involved in the delivery of the on-farm demonstrations has been positive. Comments have praised the Hub for providing initiatives that directly and practically address local drought resilience issues and take account of locally nuanced farming approaches and systems. Much of this work would not have occurred without dedicated project funding through the SA Drought Hub, or if the Hub's co-design process had not been initiated and allowed grower group engagement. This is a strength of the program and has empowered local groups who are run by farmers and for farmers to lead the conversion of drought resilience priorities most applicable to them and their local members.



The ability of the SA Drought Hub to co-invest alongside other programs to add value, depth or scale has also been widely valued. The Hub has, in several instances, funded the continuation of a project after initial RDC, Industry, or Government investment or has placed money alongside RDC and industry investments. This has importantly allowed local producers groups and participants to undertake follow up work to address key limiting areas identified through the initial investments, and in doing so, increase the opportunity for adoption and extend the reach of the project.

Lessons learned have been varied across the 54 on farm trial and demonstration sites as these have been employed across a wide variety of environments, farming systems and production and industry types. General lessons learned by project lead and delivery organisations were:

- undertaking trial and demonstration site implementation in a timely manner to optimise seasonal conditions,
- Ensure project co-design and contracting are undertaken in a timely manner.
- Ensure on farm trial and demonstration sites are sites in locations that won't be impacted by previous year's management.

- Closer supervision of project partners and collaborators to ensure continuity and consistency of information delivery and timely implementation of project activities.
- Provide more oversight and guidance to landholders who have not done trial work before to ensure trials are undertaken correctly.
- Include more peer-to-peer leaning activities around the demonstration sites, not just stand up and present information.
- Having a core demonstration site with growers using the information from this to trial practices on their farms concurrently works well.



Output 11: Co-designed Operational Plans

Indicators in Data Capture Plan

11.1 Extent to which co-design principles and processes were used appropriately.

The SA Drought Hub co-design process was run alongside and at the same time as the development of the Operational Plan. The Hub member organisations who were involved in co-writing the Operational Plan felt the plan provided the opportunity for the SA Drought Hub to capture it's objectives and delivery strategy in a single and succinct document. Information and feedback received through the co-design workshops and other co design consultations was used to guide the development of the Operational Plan and the Hub's program logic. The 991 ideas received through co-design consultations were ordered into 10 themes to understand the priority placed by codesign participants towards certain areas of drought resilience building, and the opportunities that this presented for project development. The key themes identified through the initial co-design process have continued to guide Hub investment and delivery of the activity workplan. The 10 themes identified in the Operational Plan and program logic are:

1. Community resilience and wellbeing through support, collaboration, and access to technologies.

2. Farm planning and decision making to manage climate and operational risk.
3. Farm business management.
4. Livestock and fodder management strategies, technologies, and innovations.
5. Crop and pasture management strategies, technologies, and innovations.
6. Access to drought information and technical support.
7. Soil and land management strategies, technologies, and innovations.
8. Water security and management strategies, technologies, and innovations.
9. Native vegetation, biodiversity, pest management strategies, technologies, and innovations.
10. Upskilling advisers, researchers, and key influencers.

A recent review and revision of the activity work plan has seen the continuation of these themes but improved alignment of the activities to the project context and delivery needs of Hub members, network partners, and end users. Allowing the Hub to revise the Activity Work plan has provided the opportunity to ensure the activities of the Hub are best aligned with evolving and emerging grower needs and collective resources of the Hub members.

11.2 Impact of co-design principles and processes on stakeholder satisfaction with the process and outcomes.

Projects were co-designed between Hub Members based on the themes and priorities stemming from the initial consultation and presented in the Hub Program Logic. For each project of the Hub that was scoped, the Knowledge Broker, Node Coordinator, Farming Systems Group representatives, local service providers, Landscape Boards and people with relevant technical expertise were engaged in design of the project(s). This facilitated strong alignment with the deliverables, target outcomes and built ownership of all involved in the project. Node Stakeholder Advisory Groups (SAGs) have also had involvement in project prioritisation and design since their inception over the past 12 months. This has strengthened the Hub's co-design process.

Grower and other end user satisfaction has been measured through the Hub Learning Activity Survey undertaken at learning events such as field days and workshops and producer visits to demonstration sites and farm walks. The feedback from the 332 Learning Activity surveys received across the financial year was overwhelmingly positive, indicating a high level of satisfaction with the process and outcomes of co-design. Results of the learning activity surveys are displayed fully under the short term outcome 5 (ST5)

- In response to the Hub Learning Activity Survey question: *The content of this activity was easy to understand*: 97% of the 306 respondents either agreed (78%) or strongly agreed (19%) with 3% of respondents disagreeing.
- In response to the Hub Learning Activity Survey question: *The content of this activity was relevant in helping me to prepare for, or respond to, future drought?* 90% of the 308 respondents either agreed (79%) or strongly agreed (11%) with 6% of respondents disagreeing. 4% of respondents said this question was not applicable to them.

- In response to the Hub Learning Activity Survey question: *The content of this activity was relevant to my needs?* 95% of the 307 respondents either agreed (80%) or strongly agreed (15%) with 2% of respondents disagreeing. 3% of respondents said this question was not applicable to them.



There is also a high degree of satisfaction expressed through the Hub Member survey (see data presented in Short Term Outcome 2 (ST2)) for the questions:

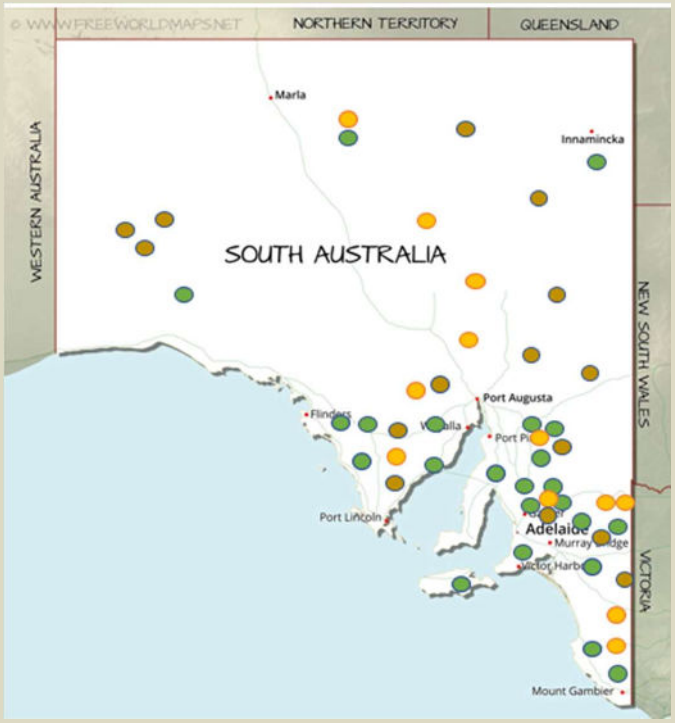
- *How satisfied are you with the opportunities to ask questions about the Hub priorities and planned activities?* 100% of respondents were satisfied (34%) or very satisfied (64%)
- *How satisfied are you with the opportunities to provide your thoughts and inputs on the Hub priorities and planned activities?* 98% of respondents were either satisfied (39%) or very satisfied (59%) with 2 % of respondents dissatisfied.
- *How satisfied are you with the extent to which your input is valued and ultimately influences Hub priorities and planned activities?* 100% of respondents were either satisfied (48%) or very satisfied (52%)
- *How satisfied are you with the day-to-day functioning of the Hub? 41*% of respondents were either satisfied (14%) or very satisfied (27%) with 2% of respondents dissatisfied.

Output 12: Activity Plans that incorporate aspects of co-design processes

Indicators in Data Capture Plan

12.1 Number and type of activity plans arising from the co-design process.

The Hub developed an activity work plan with alignment to the themes identified through the co-design process, and the associated issues and ideas that sit within these. This plan has been used to guide project priorities, project type, project scale, delivery mechanism, and level of investment. The activity work plan was developed in late 2021 and early 2022 in conjunction with the operational planning and codesign processes. Projects stemming from the activity work plan were first developed in late Summer / early Autumn 2022 with implementation on the ground commencing in mid-Autumn to align with the southern Australian cereal growing season. Project development has been ongoing since that time, engaging a range of industries and being delivered in locations right across the SA Drought Hub's operating area.



SA Drought Hub projects and activities being delivered across SA

As co-design has continued and priorities have evolved and emerged, or been addressed, there has become a need for revision of the activity work plan to better align with the evolving priorities and the manner in which groups are best achieving engagement and delivery of projects. An example is the limited desire across the Hub member network, particularly those who engage in on ground delivery to producer audiences, to take emerging technologies through to commercialization. The approach for Hub commercialization activities has therefore been on demonstration of newly commercialized products as this is where the producer interest sits.

The Activity work plan has recently been revised to better reflect the program delivery that members are seeking, and to better meet co-design priorities as they evolve. The revised activity work plan has been submitted to DAFF for approval as part of the SA Drought hub's progress report 5.

12.2 Activities/outputs/programs developed and delivered using a co-design process.

All of the Hub Projects being delivered employ a co-design process. This includes alignment of project delivery with the themes and project priorities identified through the initial co-design consultations and working with Hub members, network partners and end users to design and deliver projects.

Where an issue may not have been initially identified but has since become important, producers and Hub member organisations can present project ideas to the Hub through our Nodes and Node Stakeholder Advisory Groups (SAGs). The SAGs are made up of representatives from Hub member organisations and local producers. Where the relevant SAG feels the project is an important drought resilience measure for local producers, the project can be supported.

SAGs also act as a sounding board and assist in the co-design of projects that were identified in the initial co-design consultations, helping to refine projects, and bringing together local providers and producers to participate in the projects. Node coordinators also assist with the process of project development.

Hub staff attended 180 meetings with member organisations and stakeholders with the primary focus on codesign, implementation, and delivery of projects. Huib staff also attended 28 workshops, 28 field days, 6 information sessions, 5 conferences, 2 forums and 6 other events. Attendance across all events further enabled stakeholder engagement and feedback that assisted the Hub activity and project co-design process. The meetings and events were collectively attended by 5241 people with 1596 growers receiving information about the SA Drought Hub, associated activities, and opportunities for involvement.



The recent activity work plan review and realignment of activities to better meet the needs of Hub members, network partners and end users, and is indicative of the ongoing co-design process the SA Drought Hub is engaged in.

Output 13: Outputs from Hub governance activities conducted

Indicators in Data Capture Plan

13.1 Number and type of governance activities: when, by whom, how many, and progress made.

The Hub has an Advisory Board to advise the Director on strategic directions and meeting the needs of local agricultural industries. The Advisory Board has an independent chair and includes representation from PIRSA, the University of Adelaide, Ag Excellence Alliance, key agriculture commodity representative groups, Local Government Association, Landscape SA and appropriate State Government Agencies. The Advisory Board also meets with representatives from other FDF programs undertaken within SA to ensure communication between FDF programs to avoid duplication and maximise outputs from each program.

The SA Drought Hub has an Institutional Management Committee (IMC) to oversee the governance and management arrangements and progress of the Hub. This includes project approval, Membership and Network Partner additions, budget oversight, progress against the activity work plan, and reporting.

Each Node in the Hub has established a Stakeholder Advisory Group (SAG) that includes representatives from the Hub Members and Network Partners participating in project delivery at each Node and local primary producers. The role of the SAGs is to work with the Node Coordinators, Adoption Officers and Knowledge Broker to help co-design and co-deliver activities on the ground to meet priorities identified through the co-design process in each of the node regions. The SAGs act as a sounding board, helping to refine projects and bringing together local providers and producers to participate in the projects.

Senior Hub staff conduct a weekly management meeting to plan for and manage upcoming events, project delivery, funding opportunities, reporting, stakeholder engagement, communications, and other operational matters that arise. Senior staff discuss weekly workplans and allocate tasks that require attention to personnel accordingly.

Operations staff conduct a fortnightly operations meeting to identify and discuss project delivery opportunities, update progress of current projects, share project results, look for opportunities for cross node collaborations, and discuss weekly workplans. The SA Drought Hub Knowledge Broker attends the management meeting and the Operations Meeting to link information between the two.

There have been:

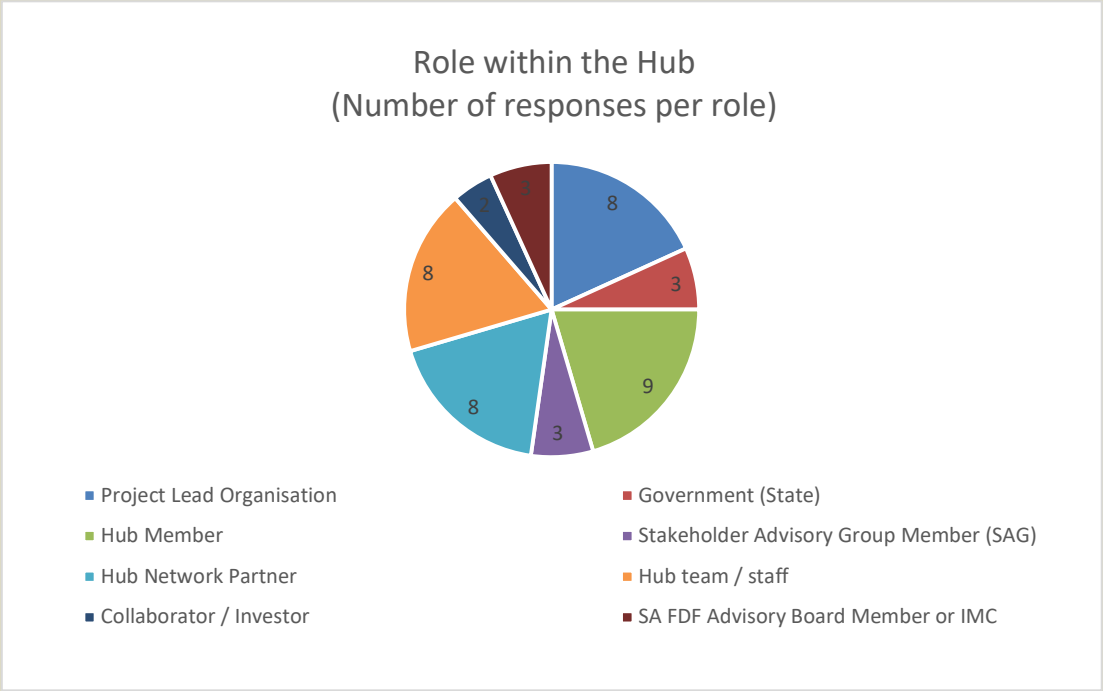
- 3 x FDF Advisory Board meetings,
- 3 x Institutional Management Committee (IMC) Meetings,
- 10 x Node Stakeholder Advisory Group (SAG) meetings
- 47 x weekly Hub Management Meetings
- 15 x fortnightly Staff Operations Meetings

13.2 Level of satisfaction by governance members on their level of input, the extent to which it is valued and its impact on guiding the program.

The SA Drought Hub member survey was distributed in July 2023 to people from key Hub member and partner organisations, Hub governance committees and groups, and staff to assess the

degree of satisfaction with the Hub's governance processes and level engagement. A total of 44 responses were received (44% return rate) with the table below showing the number of responses for each role within the Hub. It is important to note that many of the organisations and people engaged in the SA Drought Hub have more than one role and people were asked to complete the survey for the main role they undertake within the SA Drought Hub.

Role within the Hub	Number of responses
SA FDF Advisory Board Member or IMC	3
Stakeholder Advisory Group Member (SAG)	3
Hub Member	9
Hub Network Partner	8
Project Lead Organisation	8
Collaborator / Investor	2
Government (State)	3
Hub team / staff	8
TOTAL	**44**



The level of satisfaction by governance members on their level of input, the extent to which it is valued and its impact on guiding the program was positive in all regards.

- In response to the member survey question: *How satisfied are you with the opportunities to ask questions about the Hub priorities and planned activities?* 100% of the 44 respondents were satisfied (34%) or very satisfied (64%)
- In response to the member survey question: *How satisfied are you with the opportunities to provide your thoughts and inputs on the Hub priorities and planned activities?* 98% of the 44 respondents were either satisfied (39%) or very satisfied (59%) with 2 % of

respondents dissatisfied. This response was from one person who felt the Hub did not engage in sufficient dialogue outside of agricultural matters, needed to engage better with local government and have a greater focus on mental health, wellbeing, and urban environments, and build the links between farming and regional towns.

- In response to the member survey question: *How satisfied are you with the extent to which your input is valued and ultimately influences Hub priorities and planned activities?* 100% of the 44 respondents were either satisfied (48%) or very satisfied (52%)
- In response to the member survey question: *How satisfied are you with the day-to-day functioning of the Hub? 41%* of the 44 respondents were either satisfied (14%) or very satisfied (27%) with 57% of the 44 respondents feeling that this question was not applicable to them as they don't have involvement in the 'day to day' functioning of the Hub. There was also 2% of respondents who were dissatisfied. This response was from the same person who was dissatisfied when asked the question: *How satisfied are you with the opportunities to provide your thoughts and inputs on the Hub priorities and planned activities?* Their dissatisfaction was for the reasons outlined above.



Supporting questions

1. How has the governance evolved since the inception of the Hubs?

Hub governance has evolved since the inception of the SA Drought Hub, particularly as nodes have become established and projects delivered regionally. Since Hub inception there has progressively been a streamlining of the Hub's management and operational staff meetings to minimize meeting time whilst ensuring activities, programs and projects are developed and delivered optimally.

The regional Stakeholder Advisory Groups (SAGS) were established over the past 12 months in each of the 5 Hub Nodes and at the Central Hub though an open call for nominations. The SAGs are made up of representatives from local Hub member organisations and farmers / producers and serve to bring community ideas through the Nodes to the Hub for consideration, identify and link project partners and community members into hub projects, and to assist hub Staff with the design of projects to best meet local community needs. The SAGs meet as required throughout the

year to compliment the timing of local production systems and the delivery timeframes of projects and other Hub initiatives. To date there have been 10 SAG meetings conducted across the Hub with many more email communications between members.

The Hub has updated contracting processes for improved administration of Hub projects and funds and to better align project reporting information to the requirements of MEL and Progress reports.

2. What governance related challenges has the Hub encountered and how has the Hub addressed them?

The following governance related challenges have been encountered by the Hub:

- The key audience of the Hub is primarily farmers and farmer / grower groups, with many of the Hub projects delivered on the ground through these groups in order to leverage their extensive farmer networks across the state. As not for profit community-based organisations, it is often difficult for them to find the in kind contributions that are required to meet FDF program expectations.
- Admission of new Hub members network partners is onerous under the head Agreement terms. This establishes a barrier to engagement and participation when building drought resilience should and needs to be for everyone. This impediment seems to be counter to the objectives of the Drought hubs program and the FDF more broadly.
- Attracting co-investment in projects from Research and Development Corporations (RDCs) is limited by legislation and rules on intellectual Property that govern RDCs.
- Hub program timeframes don't give certainty potential major co-investors on the longevity of the hubs and our ability to address complex issues over the longer time periods that these issues require for resolution.

3. Are there any other reflections or lessons learned related to the Hub's governance that are relevant from a MEL perspective?

There is significant duplication of information provision across the Progress reports, MEL Reports and Data Capture Spreadsheet. MEL reporting should be streamlined to provide the required information for the achievement of key nationally consistent outcomes that align with the common scope and purpose of Drought Hubs. SA Drought Hub outputs are often reported in both MEL and project reports due to the structure and content of the SA Drought Hub Activity Work plan. Currently there are several examples of output reporting questions which duplicate the outcomes reporting.

Output 14: Drought commercialisation opportunities

Indicators in Data Capture Plan

14.1 Number and type of products promoted and/or assessed for potential commercialisation.

There has been interest from grower groups and commercial companies on the demonstration of newly commercialized products which contribute the addressing the priorities identified through the hub's co-design. This has led to their contribution and involvement in projects being delivered by the Hub. Demonstrations have been established including:

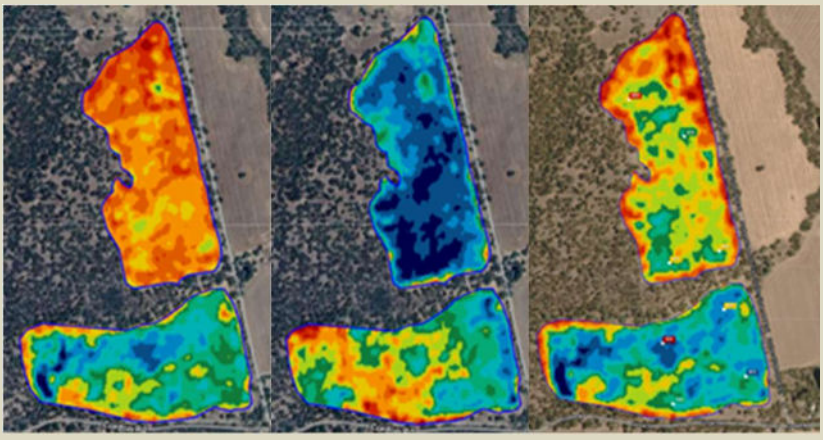
1. Improving on-farm water security using innovative remote sensing systems. This project showcases four current water (for livestock) management technologies on farm and has completed economic analysis on a number of water management technologies to determine the benefits from installation. Video case studies have been developed with producers who hosted the demonstration site providing their opinions on the technologies. See https://biggroup.org.au/videos





2. Use of property mapping technology for property planning in rangelands. This project allows pastoralists to use the latest remote sensing and ground-based mapping technologies to plan works such as water management, earthworks, and road construction, and manage grazing optimally on their properties.

3. Use of NDVI and other remote sensing to determine pasture volume and health as a guide to grazing management in low rainfall areas. This project demonstrates the use of remote sensing technologies to monitor pasture volume, health, and yield potential to allow for responsiveness to seasonal conditions as they change. This informs producers and allows them to match livestock numbers to the pasture volume in the paddock.



NDVI imagery at Site 2, taken on the 28th of July on the left, and the 6th of September (middle), and October 21st (right)

4. Assessment and promotion of pasture forecasting tools available to assist decision making in available pasture supply, feed budgeting, and stocking rate. The project catalogued a range of online tools that are available to graziers and compared the functionality, accuracy for application in the higher rainfall areas of SA, considerations, and cost.

14.2 Number, type and stage of commercialisation opportunities promoted and/or delivered.

The SA Drought Hub has not promoted any commercialization opportunities as this has not been the focus of the Hub. The co-design undertaken by the hub identified opportunities for the Hub to support on farm extension and adoption of recently commercialized tools and products through demonstration sites rather than assisting the commercialization of emerging products.

Supporting question

1 Please describe instances where the Hub has supported others in relation to commercialisation e.g. training, match-making and grants support.

The SA Drought Hub has not promoted any commercialization opportunities as this has not been the focus of the Hub. The co-design undertaken by the hub identified opportunities for the Hub to support on farm extension and adoption of recently commercialized tools and products through demonstration sites rather than assisting the commercialization of emerging products.

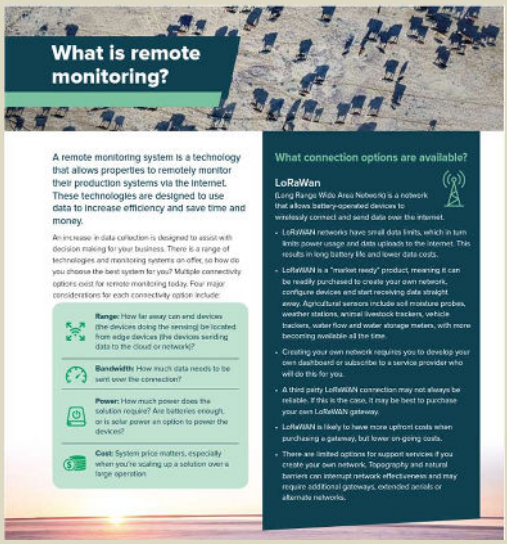
Output 15: Drought and resilience tools and products

Indicators in Data Capture Plan

15.1 Number of drought and resilience tools and products promoted and/or developed, and their description/purpose including intended user.

A total of 34 drought resilience tools and products have been developed and promoted using the extensive SA Drought Hub and Hub member organisation communications networks. These include fact sheets, case studies, podcasts, videos, websites, newsletters, and technical reports to provide information to a wide range of audiences. These are displayed in the Data Capture Spreadsheet. The purpose of these has varied and includes drought resilience findings and how to guides in the form of case studies, on farm trail and demonstration site findings in the form of technical reports, and farmer to farmer advice and knowledge sharing in the form of videos and podcasts. The SA Drought hub website has been maintained and contains a range of drought resilience resources, and the Hub newsletter has promoted Hub and FDF program activities, and the opportunities for producers and community members to participate.





15.2 Promotion and/or facilitation of activities (delivered by Hub) to support tools and products development.

The SA Drought Hub has promoted a wide range of Hub developed resources, tools and activities and other drought resilience tools and products through the SA Drought Hub communications channels including social media, the Hub Newsletter, and the Hub website. These include fact sheets, case studies, podcasts, videos, websites, newsletters, and technical reports to provide information to a wide range of audiences. These are displayed in the Data Capture Spreadsheet. In addition, many of the products have also been promoted through the communications media and networks of Hub member organisations. There are a range of current projects which are also expected to develop a range of drought resilience tools and products, and these will be promoted once ready.

The SA Drought Hub has promoted drought resilience tools and products including videos, case studies and podcasts which have been developed by other Drought Resilience Hubs and organisations not associated with the SA Drought Hub. These have been promoted through the Hub media channels such as our social media accounts and newsletter.

Two Climate Services for Agriculture and DR SAT training sessions were conducted in Adelaide and Port Augusta for project extension staff. The workshops had a dual purpose: 1) to train extension staff in the operation and application of these tools so that they can train farmers, and 2) to provide feedback to the developers of each program on where improvements could be made to make the tools more easily usable to farmers. The Adelaide workshop had 15 attendees and the Port Augusta workshop had 12.

Hub Specific Outputs

Hub Specific Output 1: Establish a Drought Resilience Innovation Scheme.

This output was developed to directly report on Activity 3 of the SA Drought Hub's initial Activity Work plan titled '*Establish a Drought Resilience Innovation Scheme*'. A recent review and realignment of the Hub Activity Work Plan has seen this outcome renamed to '*Establish Innovative Drought Resilience Projects'* to better reflect the needs identified as Hub priorities and delivery mechanisms have continued to evolve. Given the amendment to the activity workplan this output is now redundant. The reporting that relates to this outcome is now captured under Outputs 1, 7, 9, and 10 and any repotting under this output would be a duplication of what has been reported under those activities. All metrics associated with the this. Output are reported directly through the Hub's progress reporting in the Milestone self-0assessment section.

Indicators in Data Capture Plan

1.1 Number and type of innovations

Hub to add text

1.2 Method of scale out (field trial and demonstration, training event etc.)

Hub to add text

1.3 Number of users that participated / engaged in the innovations

Hub to add text

Appendix D: Hub MEL Report 31 August 2023 Excel Spreadsheet

Please refer to excel spreadsheet (SA Drought Hub Data Capture Spreadsheet) for Hub MEL Report 31 August 2023.

