



Charles Sturt
University

Future Drought Fund Drought Resilience Adoption and Innovation Hubs Review

2 October 2024

Office of the Deputy Vice-Chancellor (Research)
Charles Sturt University

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Mr Adam Fennessy PSM,
Secretary, Department of Agriculture, Fisheries and Forestry
GPO Box 858
CANBERRA ACT 2601

By email: fdfhubsreview@aff.gov.au

Dear Mr Fennessy

Charles Sturt University welcomes this opportunity to provide a submission to the Future Drought Fund Drought Resilience Adoption and Innovation Hubs Review. Drought resilience and adaptation to climate change are key issues of concern for the regional communities we serve. Our awareness of those concerns and our long history in agricultural and environmental research and education inspired the University's successful bid to host one of the Drought Resilience Adoption and Innovation Hubs set up under the Future Drought Fund.

The Southern NSW Drought Resilience Adoption and Innovation Hub has proven to be an invaluable platform for the University to strengthen its relationships with producers, processors and communities across the state. It has allowed us to translate our high-quality research in agricultural and environmental sciences into real-world benefits in new ways, extending the reach and impact of our capabilities in water and land management, digital agriculture, biosecurity, and sustainability.

As the nation faces another challenging summer, the importance of initiatives like the Future Drought Fund and the Hubs only becomes clearer. The recent Productivity Commission inquiry on the Future Drought Fund confirmed the value and effectiveness of the Drought Hubs and made worthwhile recommendations on how to build on their early success. Former Minister Watts' prompt action in response to the Commission's findings has provided some short-term security for the Hubs, but drought is a long-term challenge and the projects and partnerships facilitated by the Hubs require financial certainty if they are to maintain the momentum to date.

Charles Sturt University suggests that providing this certainty should be a headline recommendation from the review, for implementation in the 2025-26 Budget in keeping with the Government's 2024-25 Budget commitment of \$104 million over the six years from 2026-27. The development of Statements of Expectations for each Hub, as recommended by the Productivity Commission, will help ensure the best possible benefits accrue from this investment.

As Australia's largest regional university and a major contributor to regional workforce skills, capabilities and knowledge, Charles Sturt recognises that responding to the challenges of drought and climate change will require diverse skills, new knowledge, and coordinated action across all levels of government and in partnership with regional communities. We therefore suggest further that there is value in exploring opportunities to align activity under the Future Drought Fund, and the Drought Hubs in particular, with wider Australian Government priorities and programs including the National Reconstruction Fund, the National Skills Agreement, the revised National Science and



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Research Priorities and, for the NSW, Queensland, and South Australian Hubs, the Murray-Darling Basin Plan.

Charles Sturt University would be happy to provide the Department with more information on any of the issues covered by this submission.

Yours sincerely

A handwritten signature in black ink, appearing to read "M. Friend".

Professor Michael Friend
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Future Drought Fund Drought Resilience Adoption and Innovation Hubs Review

General observations

Charles Sturt University is Australia's largest regional university, with more than 36,000 students and over 2,000 staff. We are a unique multi-campus institution with campuses in some of New South Wales' fastest-growing and most vibrant regional communities: in Albury-Wodonga, Bathurst, Dubbo, Goulburn, Orange, Port Macquarie, and Wagga Wagga with strong connections to surrounding rural and remote communities. We also have smaller campuses and study centres located in other areas throughout rural and regional south-eastern Australia. The University is also one of the nation's largest providers of online education, so we have an essential role in boosting higher education participation and attainment, not just in regional NSW but across the country.

Charles Sturt's history in agriculture and environmental education, research, and innovation extends back almost 130 years, to the establishment of the Wagga Wagga Experimental Farm. As around 75% of Charles Sturt graduates go on to work in regional areas, our contribution to the regional workforce in these fields is even more significant, as is our graduates' influence on the lives and health of regional residents, the sustainability, productivity, and profitability of regional businesses, and on innovation, sustainability and resilience in Australia's agriculture sector.

The University's footprint extends across most of NSW's agricultural regions, and we have a long and proud track record in meeting the education, training, and research needs of regional students, communities, and employers. Our experience, our connections with agricultural regions and business, our key role in educating the agricultural workforce, and globally recognised research strength in agricultural and environmental science mean Charles Sturt University is uniquely placed to help Australian farmers and farming communities adapt to climate change.

It was this experience, and our strong ties to regional communities, that led the University to successfully bid to host the Southern NSW Drought Resilience Adoption and Innovation Hub in 2020. The Productivity Commission's evaluation of the Future Drought Fund (FDF) confirmed the value and impact of the Drought Hubs, noting that they have responsibilities that include the "dissemination and uptake of information and knowledge" under a wider FDF knowledge strategy, and "have led to greater collaboration between industry, natural resource managers, researchers and community groups". This has certainly been our experience with the Southern NSW Hub. It is now well-established with a solid track record of delivery against the goals of the program and for our partners across the region. It has helped to consolidate a range of cross-sector partnerships, catalyse the formation of new ones, and provided an effective vehicle for the transmission and translation of knowledge.

The successful development and implementation of the Southern NSW Hub, and its track record to date, informs this response to Future Drought Fund Drought Resilience Adoption and Innovation Hubs Review.



Feedback

Charles Sturt provides the following in response to the questions posed in the Future Drought Fund Drought Resilience Adoption and Innovation Hubs Review issues paper.

Hub performance in your region

1. *What do you see as the hub's role?*

The role of the SNSW Hub is to enable connection of farmers and communities to the tools technologies and knowhow needed for them to implement practice and systems changes that make the farms, landscapes and communities of SNSW more resilient to the social economic and environmental impacts of drought and climate change. It is a structural mechanism to support collaboration, leverage of expertise and investment and to drive action in priority areas.

The SNSW Hub does this by:

- a. Collating and creating insights to support development of drought and climate resilience by
 - Collating and curating existing knowledge and tools
 - Creating new insights around the social and environmental impacts of drought and levels and drivers of resilience at community and farm level
 - Identifying priority areas for action to support local and regional drought resilience
- b. Building Capability of extension personnel and organisations by
 - Designing and embedding bespoke methods and approaches for values-based engagement and people centred design
 - Designing and embedding modern approaches to extension that curate and target information and are based on social science and adult learning theory
 - Providing training and learning activities to support extension, engagement and project design skill development
- c. Creating capacity and collaboration across the region by:
 - Working through and with partners, collaborators and other stakeholders to deliver farmer and community facing activities rather than becoming an actor in that part of the innovation system
 - Using co-design and values-based engagement to create collaborative projects and leverage existing skills and investment
 - Working across the national Hub network to share insights and knowledge and create collaborative co-invested projects.
- d. Leveraging Investment by using core hub capacity to develop high quality co-designed collaborative projects and programs with people and organisations trusted by farmers and/or communities that attract new investment in high priority areas for drought and climate resilience in SNSW.



The SNSW Hub has leveraged an additional \$20.2m in cash and \$12.1mill in kind investment for on-the-ground projects helping farmers and communities to be better prepared for and more resilient to drought.

The Hub achieves on-ground impact by utilising the extensive capabilities of its partners. This preferred, rather than duplicating functions and increasing complexity for farmers and communities.

2. *How would you describe the local or regional awareness of the hub?*

Local and regional awareness of the SNSW Hub is growing. As more of our on the ground projects are underway and delivering outcomes farmers and communities are becoming aware of the Hub and its work.

The SNSW Hub conducts all its farmer facing and community on the ground activities through its partner organisations (e.g. NSW LLS, farming systems groups and NSW DPI) because these organisations have established trusted relationships with farmers and community. As a result, farmers and community members often don't have clear line of sight to the Hub as an entity. However, we see success in terms of the on-the-ground adoption and building of resilience.

There is also growing understanding not just of the Hub's existence but its role, specifically that the Hub is not a funding organisation, but is focused on collaboration, capacity building and leveraging external investment.

Building the Hub profile is an ongoing challenge. To put this in perspective, RDCs face challenges demonstrating their on-the-ground impact to some producers, even though many have been in operation for more than 30 years and have annual investments nearly 50 times greater than Hub core funding.

3. *What have been the main benefits of the hub?*

The SNSW Hub has been able to demonstrate benefit and real impact in its core areas of focus:

- Collating and creating insights
 - i. [Baselining drought report](#)
 - ii. Visualising changing resilience in regional communities [impact case study](#)
 - iii. Communities learning from the past to prepare for the future [impact case study](#)
 - iv. Seven *Preparing with hindsight* [case studies](#) - reflections of real farmers from before, during and after drought.
- Building Capability in extension: Making soil science accessible to enhance drought resilience [impact case study](#)
- Creating Capacity and Collaboration
 - i. Impact pathway and case studies [report](#)
 - ii. Hub helps Little River Landcare tap into a broader network [case study](#)
- Leveraging Investment



The SNSW Hub has grown from its initial investment of \$8.9million in cash and \$10.9 million in in-kind co-contributions to \$33.84million in cash and \$24.98 million in in-kind co-contributions. This includes 13 externally funded on the ground projects worth \$19.06 million cash and \$12.83 million in in-kind.

- Mixed Farming Trials project starts from the front foot [impact case study](#)
- On-the-ground impact from projects
 - See SNSW Hub Monitoring, Evaluation & Learning Report for 2023-24

The SNSW Hub has grown from its initial investment of \$8.9million in cash and \$10.9 million in in-kind co-contributions to \$33.84million in cash and \$24.98 million in in-kind co-contributions. This includes 13 externally funded on the ground projects.

4. *What challenges has the hub experienced?*

There are four main areas of challenge experienced by the SNSW Hub that we expect to continue into the future unless specific interventions occur. These are:

- There are limited resources available to address opportunities and issues. This includes:
 - i. it can be difficult engage additional services and activities due to limited availability of people with the right skills. Furthermore, many potential partners are time poor, with the cyclical nature of work in the sector an additional factor that needs to be managed. Strategies to support leveraging and collaboration as well as clear priorities are needed to ensure that resource allocation is truly effective.
 - ii. Inefficiencies created when the levels of reporting required are disproportional to the level of funding received and recognising that the level of administration is determined by the reporting requirements not the size of the grant
- Inability to find and access existing tools and knowledge to support drought and climate resilience which includes:
 - RD&E outcomes not being readily accessible. Volume and complexity of information hard to curate, collate and target for specific opportunities and issues.
 - There is a plethora of research and knowledge on drought and climate resilience, but much of it is scattered in a wide range of academic journals or project reports and resources from completed projects undertaken by various universities, RDCs and state departments. Just as Soil Science Australia undertakes a knowledge curation and key resource provision for soils, there is a need for a similar organisation or ongoing collaborative project for drought and climate variability.
- The competitive nature of grants and funding across the agricultural innovation system.
 - The SNSW Hub considers that FDF grants rounds should be refined to promote collaboration and not competition. Partnering and collaboration across industry and the region is a founding principle of the Hub and again has been cited as a core benefit of the Hub. For such partnering and collaboration to occur, the FDF should consider change to the nature of the open grant rounds.



- Competitive grant rounds historically used by investors in agricultural RD&E have typically had a negative effect on regional collaboration and partnership and the ability to effectively co-design programs of work. We have seen this effect on Hub partnerships when competitive investment opportunities have occurred over the last three years. It contributes to end-user fatigue. Partnering and collaboration enhances the efficiency and impact of regional efforts to build resilience against drought and climate variability. Where resources and capacity are finite, they need to be employed optimally.
- The intellectual property (IP) provisions in the Hub Head agreements are not consistent with the IP provisions used by Rural Research and Development Corporations and this has hampered collaboration. Future Hub Head agreements need to be drafted to remove this barrier to collaboration.

5. *How effectively has the hub worked with other agencies and organisations?*

The SNSW Hub has established positive and productive working relationships across the region these include:

- National Hub Network – with particular focus on the QLD/NNSW Hub to enable consistent delivery of activities and stakeholder experience across NSW
- Local government and local government groups
- NSW Government agencies – NSW DPIRD, NSW LLS, Regional NSW
- Farmer advocacy groups – NSW Farmers and NFF, NSW Wine growers
- Universities – Charles Sturt, Canberra University and Australian National University
- NRM groups – Landcare NSW, Holbrook Landcare Network, Mulloon Institute
- Farming systems groups – FarmLink, CWFS, Riverine Plains, IREC, ICC, Southern Growers, Grains Orana Alliance, AMPs, Monaro Farming systems group, Tablelands farming systems group
- RDCs – particularly GRDC, Wine Australia, AgriFutures, MLA, HortInnovation, AIA – and we have engaged broadly across the RDC sector.

A total of thirty-five organisations have received project funding through Hub managed programs (see appendix), and the network of collaboration organisations stretches far beyond this. These organisations recognise the Hub as a key project builder and collaborator.

We have also established projects and activities with many more groups and organisations across SNSW and nationally and recognise that it is early in the life of the Hub and expect many more collaborations and relationships to develop.

“The Hub has brought us all into the same tent”

“We recognise that agencies and organisations need to come together to understand what problems are facing our communities, producers and landholders – then we can collectively put our resources together and find alignment between our strengths to deliver outcomes.”



Coming together under the Hub governance model allows us to focus on what it is we're trying to achieve. The Hub has brought us all into the same tent – NSW government departments, universities, farming systems groups and more – and that drives good outcomes for farmers, regions and communities, as well as for the funding provider.

This governance structure also means we have trust across organisations and once priorities have been agreed on and contracts are in place, the Hub steps back and lets us deliver.

The Adoption Officers program is an example of this – all the parts of the jigsaw fit together to deliver for farmers and landholders. By embedding the Adoption Officers directly into NSW LLS, we've been able to make sure we're leveraging existing networks to reach even more people.

The Adoption Officers are there with the community the whole way through, not just in dry times, and they carry on relationships that build and grow. Being part of their communities across NSW also means they hear what is really going on and can respond to what they need.”

Gary Rodda, Director, Statewide Programs, NSW Local Land Services

6. *How does the hub engage with producers? How effective is this?*

The SNSW Hub engages with producers in three ways:

- (1) Identification of priorities and on the ground delivery of projects and activities occurs through Hub partners and collaborators – NSWLLS, NSW DPI, Rural Aid, farming systems groups, NRM groups, community groups and first nations groups. This is effective in transferring knowledge, tools and technologies and supporting practice change because these people and organisations have:
 - Established trusted long-term relationships with the people and communities they are engaging with
 - Accepted mandates in knowledge transfer and supported adoption in the SNSW innovation ecosystem
 - Existing skill and investment in areas of focus for the Hub, and
 - Certain and enduring futures in the SNSW innovation ecosystem
- (2) Engaging producers in the co-design of projects. Producers have been embedded in the design and delivery of the following Hub projects:
 - Saving Our Soils During Drought
 - Creating Landscape-Scale Change through the Promotion of Resilient Pasture Systems
 - Improved Drought Resilience through Optimal Management of Soils and Available Water
 - Managing Farming Biosecurity Risks
 - Capturing Value of AgTech Innovation on-farm
 - Managing Rangelands for Drought Resilience



- Drought Management for Health and Longevity of Perennial Horticulture Plants
- GRDC RiskWi\$E project

(3) Creating understanding of the role and activities of the Hub occurs directly through relationship building activities by Hub staff with producer groups, farmer advocacy groups and RDCs and communication activities e.g. social and traditional media, industry presentations and events. This is effective but has longer lead times for impact as it is less tangible and not direct to producers on matters that impact them directly.

7. *How does the hub engage with First Nations people? How effective is this?*

The SNSW Hub has two First Nations engagement officer positions, a First Nations position on the Hub Board and the Board has recently approved creation of a First Nations Advisory Committee. In the first phase of the Hub both the engagement officer roles and the Board role have been filled for part of the time with the recruiting people for the roles being a challenge. The engagement work undertaken by our engagement officer has been particularly extensive and effective.

- In 2023-24 she undertook 49 First Nations engagement activities with many focused on networking/consultations to develop contacts with Aboriginal organisations across the region. At least 200 participants were involved in these activities across 20 different First Nations organisations/groups.
- There were also consultations to develop and progress project proposals, for example a proposal (Climate-Smart Agriculture Program) for establishing more First Nations community gardens, based on the current Hub-funded project at Tumut.
- Knowledge brokers attended a cultural competency training workshop where they gained confidence in engaging with First Nations communities, understanding community protocols and understanding key values around relationship to country.

The Hub would of course like to increase the extent of engagement, however the work that has been done has been very effective with good on the ground projects being designed and implemented.

8. *What are the most important skills and capacities the hubs require for success in advancing regional drought resilience?*

The SNSW Hub has identified key enabling functions that we consider necessary to support partners and stakeholders to build drought resilience across the region, these are:

- Clear insights to guide project and program development and delivery and assist in the assessment of impact along with access to the tools, technology and knowhow required to enact practice change on farm and in community.
- A transformational extension and adoption framework and process that is underpinned by social science insights, adult learning principles, curated and targeted information and tools and imbeds bespoke adoption strategies within programs of work. This will require appropriate investment for implementation.



- Strong collaborative frameworks based on people centred design and co-creation and rewarded with investment in prioritised activities.
 - Ability to direct investment into priorities areas and projects.
9. *How effectively do the hubs collaborate with each other to share products, information and knowledge?*

The National Hub network collaborates across a range of levels:

- Hub Directors meet formally every second month with FDF and informally every fortnight – the latter designed to create strategy, share stakeholder insights and leveraging the wide range of skills and expertise across the network
- Knowledge brokers meeting monthly with FDF and interact informally on a regular basis to design projects, share information and insights
- Communications teams meet informally monthly to share resources, plan collaborative events and communications while leveraging skills and expertise of the network
- Operations Managers and Finance staff meeting monthly with FDF to discuss contracting, reporting and other operational matters sharing and leveraging experiences across the different Hub structures and governance models.

These networks foster resource sharing, the avoidance of duplication and the maximising of efficiency.

The Hub network has a portfolio of cross hub projects beyond those created out of the FDF cross hub program initiative, and we continue to plan and invest in national and cross regional pieces of work. The Hubs are becoming a cohesive network for sharing and collaborating easily.

For example, in preparation for the first round of the FDF funded Long Term Field Trials grants, the SNSW Hub organised and facilitated co-design workshops with potential partners and collaborators, including meetings with the Western Australian, South Australian, Tasmanian and Victorian Hubs, University of Melbourne, GRDC, MLA and regional farming systems groups. The SNSW Hub was successful with its bid and is collaborating closely with the Tasmanian Institute of Agriculture and proponents of other long-term trial projects in Victoria and South Australia to leverage more data and insights and deliver greater impact.

Another example is the SNSW Hub's Early Insights for More Resilient Communities dashboard, where the Hub is partnering with four other Hubs to expand its reach to other states.

The SNSW Hub has also worked very closely with the SQNNSW to ensure a joined-up approach to Hub work in NSW. For example, adoption officer positions from both Hubs were hosted within NSW Local Land Services within a single team. The two Hubs have also held joint stands at NSW Farmers Conferences.

10. *How effective has the hub been in building drought resilience across your region?*

There are clear and notable examples where Hub activities and projects are directly contributing to systems and practices changes that should increase drought resilience.



The Hub can also demonstrate positive impacts on the skills and capacity required in people and organisations working with farmers and communities to further develop drought resilience.

“When a drought comes we will be ready”

Citrus grower John attended the Irrigation Masterclass run by NSW DPIRD as part of the Hub’s [Drought Management for Perennial Horticulture project](#). John found the Masterclass to be extremely valuable. He particularly appreciated the structured and relaxed environment facilitated by the presenters. The Masterclass was run over four days in digestible blocks and segments, allowing participants to grasp complex concepts without feeling overwhelmed. In particular, he appreciated the data-driven approach to irrigation, with tools like loggers providing important insights on water usage, power costs, and soil conditions.

“Water is a valuable resource and we always need to use it efficiently; using less water also saves power,” John said. “When a drought comes we will be ready and able to efficiently water the trees.”

The Masterclass information was directly relevant to John's farming business. He was able to understand better water usage, particularly critical in times of drought when water allocation is anticipated to be reduced. Using moisture monitoring equipment and data loggers, John could optimise his irrigation down to the last half hour, maximising efficiency, and minimising waste.

Description of Changes Made

John made several changes to his irrigation practices as a result of the Masterclass. He perfected his existing systems, installed new irrigation, and learnt how to interpret the data from his soil moisture monitoring equipment accurately. He believes in the importance of moisture monitoring equipment, which he argues is vital for any crop, as it allows precision watering, down to the half hour.

He has become more aware of misconceptions related to soil saturation, acknowledging that visual observations could sometimes be deceptive, confirming the importance of technology in helping to make informed decisions.

Benefits/Outcomes of Changes

The changes John implemented led to significant improvements in water and power efficiency on his farm. He was able to use every drop of water effectively and sell extra water for profit when conditions were good. Additionally, he improved his understanding of soil conditions, allowing him to make better-informed irrigation decisions.

Other case studies:

The [Saving Our Soils During Drought](#) project promoted the adoption of Stock Management Areas (SMAs), showcasing the benefits of SMAs in maintaining groundcover and reducing erosion. 15 existing SMAs were identified and modified to serve as demonstration sites across southern NSW.

The project conducted two rounds of workshops and demonstration site visits, reaching over 200 landholders across Southern NSW. Six case studies were developed to document the successful implementation of SMAs. LLS developed a comprehensive SMA manual for landholders and



extension officers, offering guidelines on how to establish and manage SMAs effectively. 2,000 copies were distributed. 100% of workshop participants said they would be likely to use this manual again. A dedicated technical officer responded to over 400 phone and email enquiries for tailored assistance and support. Over 80% of workshop participants and demonstration site visitors told us they were likely to make practical changes, including “build or redesign confinement feeding areas,” “adjust the size and shape of existing infrastructure to improve the design” and “expand existing facilities, considering water infrastructure and better trough setups.”

The [Resilient Pastures](#) project sought to help producers address pasture decline during drought and the loss of valued species from pastures. 10 sites were established across southern NSW, with demonstrations chosen by local Producer Reference Groups. 36 producers were consulted on the topic and design of these sites. There were a total of 239 attendees at field days/webinars throughout the duration of the project. Around 70% of event participants were confident to make a practice change as a result of attending the event. They identified new pasture varieties, addressing soil constraints and reconsidering the role of legumes in supplying nitrogen in mixed pastures as the most likely on-farm changes.

The [Saving Our Soils During Drought](#), [Resilient Pastures](#) and a number of other projects have just been completed so it is too early to collect data on implemented practice change resulting from these projects. However, the Hub is looking to implement longitudinal assessments to capture such data.

11. Which factors do you think most improve drought resilience? For example, changed practices, or investments in new infrastructure, equipment and technology. How has the hub focused on these factors to achieve effective change in your region?

The examples listed above are all important as tools to support, create and build drought resilience and there is significant RDC, state and federal government investments already occurring in creation of new and adaption of existing knowledge, tools and systems. The SNSW Hub has focused on supporting and enabling adoption of these R&D investment outcomes as its primary means of building drought resilience. We do this by:

- Creating an environment conducive to adoption by fostering collaboration and sharing of resources,
- Developing the skills and tools necessary for extension people and organisations to be more effective in supporting farmers and communities to implement new ideas and technologies and finally,
- attracting new investment from federal, state, RDC and industry for programs delivered on the ground by existing actors in SNSW, to support adoption of new and existing R&D outputs.

Future enhancements

17. How could the hubs program be enhanced?

Some suggested enhancements are described in the responses to question 4 on the challenges the hub has experienced. Other improvements include interventions to build capabilities in agricultural regions. For example, integration between the Drought Hubs program and other headline initiatives (such as Future Made in Australia, the Industry Growth Program, Cooperative



Research Centres – Projects, and state and territory programs) would help build innovative and absorptive capability in the sector by expanding the range of extension services (and people able to provide them) while increasing awareness of the range of tools and strategies available to producers, processors and others.

For the Hubs, though, an important ongoing challenge is that the original grant provided \$8m over three years plus funding for adoption officers, or around \$3m per year. Hub funding from 2024-25 onward is expected to be closer to \$2m per year. In addition, the purchasing power of this funding will also be considerably less, with CPI growth from 2021 to 2026 expected to total around 28 per cent. This declining funding platform should be recognised in the statement of future expectations for Hubs.

18. How could the hubs program work more effectively with other government programs, including the FDF? A list of FDF programs can be found at Appendix B, and further information is available on the department's website.

The SNSW Hub believes there could be more clear coordination and connection between Hubs and the Regional Drought Resilience Planning program. There is a clear cross over in remit between the implementation of plans and the role of the Hubs, yet there has not been a clear articulation of the role that Hubs should play in the planning process and in the role out and delivery of these plans.

Hubs could play a role in this work by having Hub partners host staff charged with delivering these plans, such is the case with the hosting of Regional Soils Co-ordinators.

19. What support should the hubs program provide to help producers prepare for and recover from drought?

See responses to questions 1, 3, 5 and 6 above.

20. Should the hubs program support drought response and, if so, what form could that take?

The initiation of the Future Drought Fund is a major drought policy advancement, in moving away from a reactionary approach to drought to a proactive, preparedness approach. This was recognised by the Productivity Commission in its recent report.

In keeping with this approach, the Drought Resilience Adoption and Innovation Hubs were established to help producers and communities to prepare for and recover from drought. Providing the Hubs with an in drought support function would distract them from this mandate.

In NSW it would also risk duplicating the work of Local Land Services and NSW DPIRD, who are the designated agencies for in drought response and has earned community trust in this area. It would also create confusion for stakeholders.

Hubs can play a role in signposting where in-drought support services are available. Hubs can also continue delivering drought preparedness workshops and resources which are applicable in the form of shorter term preparedness activity – for example seminars on drought feed requirements.

21. The Productivity Commission Inquiry recommended the FDF and hubs program encompass climate change adaptation needs. This might include adapting to higher temperatures and



changed rainfall patterns in some regions but exclude natural disasters such as floods and bushfires. How could the hubs best promote climate resilience in addition to drought resilience?

Drought is one of the many climate issues that farmers and communities grapple with. Issues that impact resilience as well as build and create it are common across many of these climatic challenges. It therefore doesn't make sense to separate climate and drought resilience. Through the use of tools such as MyClimateView the Hub can provide guidance, not only on drought patterns, but on predicted changes in growing conditions into the future.

While the Hub should clearly not have a role in the emergency response related to floods and bushfires, there is also a natural fit for Hubs to play a role in relation to the agronomic impacts of such natural disasters. For example, the SNSW Hub has undertaken a great volume of work promoting the use of stock confinement areas for drought, but these have also been found to be a very effective tool during floods. After the experience of the last three years, there is a real opportunity to capture the learnings from recent flood conditions and to help producers better prepare for future events.

22. Is there value in retaining a flexible local approach to hubs activities across each region, or: Should greater nationally consistency be sought? Would more consistency across hubs be desirable for some hub functions but not others?

There would clearly be beneficial aspects of having greater consistency across Hubs in terms of program management and clarity of roles across the country. Many of the issues that producers and communities face across the country are in common. However, any increase in consistency should not come at the expense of best servicing the unique needs of regions, the unique needs of their producers, and the different partner makeup of Hubs. Along with allowing Hubs to provide locally tailored approaches, this flexibility allows for innovative approaches to be trialled by individual Hubs and where successful, these approaches can be adopted by other Hubs. This is akin to a "laboratory federalism"¹.

A good example of user-driven, consistency was the approach that the SNSW and SQNNSW Hubs took on adoption officer positions. Adoption officers from both Hubs were hosted within NSW Local Land Services within a single team. This has led to delivery efficiencies and a common single point experience for farmers across NSW.

¹ Oates, Wallace, E. 1999. "An Essay on Fiscal Federalism." *Journal of Economic Literature*, 37 (3): 1120–1149.

APPENDIX

This table lists the 35 organisations that received project funding through Hub managed programs.

Organisation	Type
AgGrow Agronomy	Farming Systems Group
Agricultural Marketing and Production Systems	Farming Systems Group
AgriFutures	RRDC
Agrista	Agronomist
ANU	University
Brungle/Tumut Local Aboriginal Land Council	Local Aboriginal Land Council
Central West Farming Systems	Farming Systems Group
Charles Sturt University	University
CSIRO	Research Organisation
Dr John Leys (Wind Erosion Consulting)	Agricultural Consultant
FarmLink Research	Farming Systems Group
Frank and Earnest	Communications Consultant
Grains Orana Alliance	Farming Systems Group
Holbrook Landcare Network	Landcare organisation/ Farming Systems Group
Irrigation Farmers Network	Farming Systems Group
Irrigation Research & Extension Committee	Farming Systems Group
KPMG	Consultant
Local Land Services	NSW Government
Monaro Farming Systems	Farming Systems Group
Nicon Rural Services	Agronomist
NSW DPIRD	NSW Government
NSW Farmers' Association	Peak Body
Onside Technology	Technology Provider
Pinion Advisory	Agricultural Consultant
Pivotal Management Consulting	Consultant
Regional Australia Institute Ltd	Peak Body
Regional Circularity Co-operative	Ag/Environ NGO
Regional Development Australia - Riverina	Peak Body
Ricegrowers Association of Australia	Peak Body
Riverine Plains	Farming Systems Group
SGS Economics and Planning	Research Organisation
Soils Knowledge Network	Research Organisation
Southern Growers	Farming Systems Group
Tablelands Farming Systems	Farming Systems Group
University of Canberra	University
University of Wollongong	University



Organisation	Type
West Hume Landcare Inc	Landcare organisation
Western Landcare NSW Incorporated	Landcare organisation
Western Murray Land Improvement Group Incorporated	Landcare organisation/ Farming Systems Group