

# **REGIONAL DROUGHT RESILIENCE**

## **COMMUNITY CONSULTATION REPORT FOR THE INLAND GREAT SOUTHERN**





## 02

# ACKNOWLEDGEMENTS

We acknowledge the Noongar/Nyungar peoples of the south coast region as the traditional custodians of this land and we pay our respect to their Elders past, present and emerging.

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Drought resilience is a key issue for many regional communities throughout Australia. This report summarises the key concerns arising from community consultation carried out for the inland Great Southern Regional Drought Resilience Plan.

This project was delivered by South Coast Natural Resource Management (South Coast NRM) between February 2022 and May 2022 with South Coast NRM delivering the following services:

- Interviews with four (4) grower groups
- Interviews with six (6) farmer champions
- Interviews with two (2) agronomists
- Delivery of two workshops

Consultation identified a number of underpinning concepts for drought resilience, with consistent communication critical and relevant to all actions. Ongoing conversations need to take place to set the groundwork and build recognition of drought impacts and what's needed for resilience. To support this, a systems approach is needed, recognising that a farm does not sit in isolation from its surrounding catchment and community. Drought impacts are felt well beyond the farm boundaries. In delivering this approach it is important that it is collaborative and leads to both individual and community empowerment.

Discussion of information generated through consultation is presented around the key themes of understanding drought impact, drought risks, regional needs and priorities, and enhancing resilience.

Information generated through the workshops and interviews was then collated into a project list grouped into themes around three strategic priorities. Within each theme, actions are grouped around key action areas which are supported by knowledge, innovation and extension; collaboration and capacity; and related policy and planning needs.

These are presented in Table 1.

Table 1 – Strategic Priorities for the Great Southern Region

Number	Strategic Priority	Themes
1.	Grow the self-reliance and performance (productivity and profitability) of the agricultural sector.	Water access Innovation Planning Diversification and value adding
2.	Improve the natural capital of landscapes for better outcomes.	Monitoring of environmental condition Improving and maintaining natural capital Rehydrating landscapes
3.	Strengthen the wellbeing and social capital of rural, regional and remote communities.	Strong and healthy communities

Key recommendations of this project are provided on the following pages.



The results of the community consultations focused on the broad ranging impact of drought. The recommendations provided herewith focus on building the drought resilience of the community and recognises that 'access to water' is only a small component of what is required to be drought resilient. Water was considered a key resource need and a variety of projects were suggested in the project list section. These have not been included in the key recommendations, as they are typically well understood.

Key whole of landscape, whole of business and whole of community drought resilience recommendations, in order of priority, are:

1. **Extension:** The extension of drought preparedness information is critical and should be a number one priority. Consider extending information on a yearly basis useful for preparing for drought and a changing climate. This could include seasonal outlook, recommended tools, access to water and assist with ensuring the risks of drought and dry season remains at the forefront. Additionally, it could include support from government through access to knowledge through a regional hydrogeologist. Promotion and extension should be ongoing and could be supported by development of an online portal. Ownership of this portal needs to be determined, and maintenance remain a high priority. Communications need to be strategic and support the desired outcomes of building resilience.
2. **Communications consistency:** In delivering drought planning and mitigation actions, communications consistency is critical and relevant to all actions. Building recognition of the impacts of drought and what's needed for resilience should be an ongoing conversation - set the groundwork in the good times to prepare for the bad times.
3. **Support existing networks that work at the ground level:** Maintain support for grower groups and community Landcare groups. These groups provide a critical role in supporting innovation and extension. Additionally, they act as a social network, provide peer to peer learning, and are often the first point of contact when looking for information or support.



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*It's mentally draining during tough times, we need to be proactive in making decisions. Other issues can make it overwhelming and that really affects our family. Drought has a huge financial impact and we have to make hard decisions such as destocking and decreasing our cropping program.*

4. **Holistic approach:** Drought response needs to be holistic and recognise that the impacts of drought and a changing climate do not stop at the farm boundary.
5. **Education and training:** Education and training are needed to build skills and resilience. Key topics for this should be informed by the risks and information gap identified and include an assessment of community needs.
6. **Mental health and wellbeing:** This needs to be supported at both the individual and community levels. For individuals, mental health and psychosocial wellbeing needs to be supported by a range of initiatives from access to counselling and mental health professionals. This should include promoting and increasing awareness of the range of services available and how to access. At the community level supporting health and wellbeing through supporting community gatherings. This could also include supporting town centre revitalisation projects, including landscaping activities, as well as improving facilities and support access.
7. **Building and restoring natural resources:** Building and restoring natural resources is essential to supporting landscape scale resilience to drought. Consideration needs to be given to pre and post drought natural resource needs.





The Future Drought Fund Regional Drought Resilience Planning (RDRP) program funded by the Australian Government aims to support regional organisations, local government, communities and industry to partner together to develop regional drought resilience plans. The Regional Drought Resilience Plan for the inland Great Southern will identify and guide actions to build the region's resilience to future droughts, with a focus on agriculture and allied industries.

Regional drought resilience plans are community led plans, being developed in regions around Australia, that present the historical and expected future impacts of drought in the focal regions, based on the best available evidence. The plans will also contain an assessment of drought risk and adaptation pathways, based on expert input and extensive stakeholder consultation. Finally, plans will include a pipeline of investible drought resilience projects that address the specific needs and priorities of agriculture and allied industries and inform future investments in drought resilience and agricultural adaptation in the regions.

This report supports the development of the drought resilience plan for the inland Great Southern through provision of community consultation and stakeholder engagement which will contribute to the plan's development.

The key focus of this report is to collate information from stakeholder consultation across the following themes:

- preparing for and being more resilient to future droughts;
- building environmental, economic, and social resilience to droughts;
- identifying innovative and transformative drought projects to guide future investments;
- improving natural resource management.



This project was delivered by South Coast Natural Resource Management (South Coast NRM) between February 2022 and May 2022. Please note that due to the COVID pandemic, one-on-one consultations were delivered via telephone. The approach for group consultations is as set out below. South Coast NRM undertook to deliver the following services:

- Interviews with four (4) grower groups
- Interviews with six (6) farmer champions
- Interviews with two (2) agronomists
- Delivery of two workshops

### **Literature Review**

A review of existing plans and documents containing actions relating to drought and drought resilience was carried out. Documents reviewed included Southern Prospects 2019-2024, Climate Adoption Addendum to Southern Prospects 2011-2016 and the South Coast NRM Investment Plans. Extensive community consultation processes have been a cornerstone in the development of these documents. Projects identified through the literature review that are related to drought but are yet to be implemented have been incorporated in the project list.

### **Grower Group Interviews**

Representatives (the most senior staff member) from four grower groups, as nominated by the Great Southern Development Commission, were surveyed. The groups were Fitzgerald Biosphere Group (FBG), North Stirlings Pallinup Natural Resources (NSPNR), The Gillamii Centre, and Southern Dirt. In-depth telephone interviews were undertaken. A copy of the questions is included in the Appendix 1.

### **Farmer Champion Interviews**

Farmer champions were proposed by the grower groups consulted and then short listed by South Coast NRM. In-depth telephone interviews were undertaken. The selected champions were chosen to provide a diversity of land uses and cover different localities within the plan area. The main local government area of the farmer champions operations and the main land uses are as per Table 2.

The farmer champion interview questions were provided by the Great Southern Development Commission. Minor edits were made to ensure ease of interview and key outcomes would be addressed. A copy of the questions is provided in Appendix 2.

Table 2 - Farmer champions' location and land use.

Champion	Shire	Land Use
1.	Jerramungup	Sheep
2.	Broomehill/ Tambellup	Crop/ sheep
3.	Woodanilling	Sheep
4.	Kent	Crop/ sheep
5.	Gnowangerup	Crop/ sheep/ other
6.	Katanning	Crop/ sheep
7.	Cranbrook	Crop/ sheep

### Agronomist interviews

Agronomists were proposed by the grower groups consulted and then short listed by South Coast NRM. In-depth telephone interviews were undertaken. The selected agronomists were chosen due to their ability to provide feedback from across a broad landscape and variety of land uses. Individuals were approached and provided their responses through their role. These responses should not be seen as representative of the entire company. A list of the agronomy companies interviewed is included in Table 2. A copy of the questionnaire is provided in Appendix 3.

Table 3 - Agronomists interviewed, their locality and interview date.

Company	Locality/ Shire	Interview Date
Farmanco	Kojonup	9 May 2022
Nutrien Ag Solutions	Jerramungup	10 May 2022



It was initially proposed that two face to face workshops would be run, however, due to the ongoing COVID19 pandemic and the restrictions and risks around face-to-face gatherings, some changes were needed. The following process and adjustments were made:

- Workshop 1 required the greatest adjustments, with each of the reference groups needing to be consulted with individually, resulting in three separate workshop sessions. Consultation with each of the South Coast NRM reference groups; Aboriginal Reference Group, Healthy Environments Reference Group and the Land and Water Reference Group was carried out independently.
- The South Coast NRM Reference Groups are a vital resource for natural resource management (NRM) on the South Coast and are a critical link to community and the broader stakeholder network of the Great Southern Region. They have proven to be vital in identifying actions and priorities for the region as they are a source of specialist and technical knowledge and provide a problem-solving vehicle for new and existing projects, including reviews and adoption of innovation.
- Workshop 2 was intended to be delivered as a face to face NRM Forum style workshop. Through a well-planned and professionally facilitated process, the NRM forums focus on a topic and draw out debate, discussion, and actions to address issues or advance opportunities. Workshop 2 was delivered online, with Andrew Huffer from Andrew Huffer and Associates delivering a professionally facilitated session. Attendance at the workshop was open to any interested people.

## Workshop 1 – South Coast NRM Reference Groups

Three group consultation sessions were held with three South Coast NRM reference groups; Aboriginal Reference Group, Healthy Environments Reference Group and Land and Water Reference Group. The South Coast NRM reference group are long standing and respected reference groups with representation from key stakeholders across the south coast. Their key task is to ensure they guide the delivery of Southern Prospects – The Regional Strategy for NRM. Specifically, the reference groups:

- Provide recommendations and advice on projects and key regional issues;
- Provide technical oversight into the delivery of Southern Prospects;
- Act as ‘think tank’ and problem-solving vehicles for new and existing projects.

Consultation was carried out with each reference group, separately. Meeting dates are included in Table 3 and a list of attendees is provided in Appendix 4, which includes reference group members and South Coast NRM staff who provide a support, reporting and administrative function for and to the reference groups.

The Workshop 1 consultation focussed on addressing the following questions:

- What do you see as the biggest impact of drought?
- What priorities and/or actions do you feel will help increase drought resilience in the region?
- What do you see as key knowledge gaps?
- What resources are there already available that might help to inform a drought plan?

Table 3 – Reference Group consultation dates

Healthy Environments	24 February 2022
Aboriginal	17 March 2022
Land and Water	29 March 2022

## Workshop 2 – Community

The community forum was held online due to COVID restrictions, on Monday 2nd May 2022 from 1pm to 3pm via Zoom. There was an option offered for people that did not have access to Zoom to attend their local Community Resource Centre, however there were no registrations for this option. Registrations were taken through trybooking.com and it was a free event.

Promotion of the workshop was carried out through social media (Appendix 7) and through direct email invitation (Appendix 8). Invites were sent to a total of 63 people.

The forum flyer is included in Appendix 9.

The community forum was facilitated by Andrew Huffer from Andrew Huffer and Associates. Will Bessen, a graphic recorder from Tuna Blue also attended the forum to capture the ideas and themes graphically that were generated during the session.

The speakers for the forum were:

- Jarrad Gardner, Great Southern Development Commission
- Kaylene Parker, Great Southern Development Commission
- Karen Barlow, Department of Primary Industries and Regional Development
- Meredith Guthrie, Department of Primary Industries and Regional Development
- John Bruce, Department of Primary Industries and Regional Development
- Kylie Fletcher, South Coast Natural Resource Management

The agenda for the forum can be found in Appendix 10. The format for the forum included:

- presented the Drought Vulnerability Assessment for the Great Southern;
- reviewed the vulnerability and adaptive capacity maps and drought definition;
- presented preliminary consultation finding to date; and
- through breakout groups in three separate themes, collected feedback on project ideas and gaps.

Attendees were able to choose which theme group they wanted to join. A scribe in each group recorded the discussion in an online brainstorming and group decision-making tool called GroupMap (Appendix 11). Once all ideas were captured the group rated their top three ideas and then presented back to the forum. In closing of the forum attendees were offered contact details to follow up with for any further ideas.

### **Data capture and analysis**

Data capture was tailored to suit the consultations.

Data capture for workshop 1 was achieved using a virtual whiteboard and sticky notes. Information generated from these workshops were incorporated into the project list. A copy of these whiteboards is included in Appendix 5.

Data capture for workshop 2 used GroupMap. All ideas are collated and presented in Appendix 11. Ideas captured from this workshop have been incorporated into the project list.

Survey data from farmer interviews, grower groups and agronomists was captured using survey monkey. Data from these interviews is included in Appendix 6.



# 15 KEY FINDINGS & DISCUSSION

Throughout the consultation, a number of consistent underpinning concepts were identified. These have been broadly summarised below and provide a framework for building and implementing drought resilience in the inland Great Southern.

In delivering drought planning and mitigation actions, communications consistency is critical and relevant to all actions. Building recognition of the impacts of drought and what's needed for resilience should be an ongoing conversation - set the groundwork in the good times to prepare for the bad times.

A systems approach is needed, recognising that a farm does not sit in isolation from its surrounding catchment and community. Drought impacts are felt well beyond the farm boundaries. In delivering a systems approach it is important that it is collaborative and leads to both individual and community empowerment. Empowerment of individuals and communities needs to recognise the stress and load that could be experienced.

In addressing the impacts of drought, it must be recognised that there are a lot of unknowns, but at the same time there is substantial collective experience in dealing with adverse conditions. A drought plan needs to provide a framework for improving resilience. A lot can be learned from what's already happening within our communities and farming businesses. At the same time, flexibility to allow for new concepts and ideas to be trialled is also necessary.

It is also important to recognise that many of the actions identified in the following sections are interdependent. It is noted that outcomes of the surveys present an experienced and broad view of the region notwithstanding the small sample size. Six of the seven champions had lived in their area for more than twenty years and one had been in the area for 11-20 years.

## **Understanding drought impacts**

Gaining a deeper understanding of the impacts of drought was a focus of the interviews with farmer champions. Of the seven champions interviewed, only three identified as ever having experienced drought, however all identified as having experienced dry seasons.

One of the themes highlighted in the farmer champion interviews was that the definition of drought is very Eastern States focussed and not relevant to Western Australia. Experience of dry seasons and drought is very different in Western Australia and developing a state specific drought definition is necessary. Developing such a definition might help to support drought response, both personally and more broadly, by providing a framework to assess impacts that is locally relevant. It would help to validate how difficult some seasons are locally, without having to compare to other regions with different rainfall patterns and land uses.

Farmers were asked how they would define the difference between drought and dry seasons and five responses defined drought as receiving exceptionally lower than average rainfall for more than one season of which three respondents quantified this as lower than 20% of average rainfall. The remaining two responded that they had not experienced drought.

Gaining a deeper understanding of the impacts of drought was a focus of the interviews with farmer champions. Of the seven champions interviewed, only three identified as ever having experienced drought, however all identified as having experienced dry seasons.

The responses indicate a strong level of resilience within these champions and their businesses along with regional climate differences. The responses indicate the champions recognise adverse seasonal conditions and fully understand the impacts of dry seasons on their business.

Champions were asked to talk about the direct impacts of drought on them and their business. Responses focussed on financial and enterprise impacts including the decrease in income and the increase in expenditure as items such as feed and water are needed to be brought in. Respondents noted the need for good business models and planning to assist in adaptive farm management. Good planning was seen as helping to limit the stress, with the need to be adaptable and flexible seen as invaluable. The need to read the season early and make early decisions was seen as important. Changing climate trends and overall impacts on agriculture were also noted.

The additional labour demands with the need to carry out activities such as confinement feeding and water carting for some businesses was identified. Recovery times from drought are not immediate, especially for stock related enterprises. It can take considerable time to restock to pre-drought levels.

Increased stress and mental health impacts were also identified. This was seen as something that affects both the individual, the family unit and the community as a whole. Opportunities to bond over a shared stress were also expressed. One respondent articulated *"Mentally draining during tough times, need to be proactive in making decisions. Other issues can make it overwhelming and affects family. Drought has a big financial impact and have to make hard decisions such as destocking and cropping decisions."*

The farmers surveyed also reflected on the broader impacts of drought or dry seasons on their communities and region. It was noted that reduced production in dry seasons leads to financial impacts throughout rural towns and communities, described as slowing everything down and reducing community spending. This in turn affects community confidence and the willingness to get behind local projects. Staff retention was also seen as a key issue, with less staff on a farm during dry seasons, leading to an increase workload for those that remain. This workload contributes to less volunteering, less time and the perception of a reduced commitment to the community.

Mental health was also seen as a community wide issue, with the stress of drought impacting the broader community. The on-going impacts of climate change and extreme weather events on the broader community was also noted.

Natural resource management was noted as one of the first things that are cut in a dry season, with no extra time or money for activities like revegetation. The impact on natural resources were identified, with associated decreases in ground cover and the need for increased soil cover and care.

Family stress can deprive children of crucial developmental input and put them at higher risk of stress-related diseases and problems in later life (<https://parentingscience.com/family-stress/>). Mental health support needs to be a big consideration.



Figure 1. Impacts of drought identified during consultation with the South Coast NRM Reference Groups

impacts

## IDENTIFIED BY REFERENCE GROUPS



### Healthy Environments Reference Group

#### Vegetation

Loss of native vegetation exacerbates the desertification of the area. Decline in vegetation condition. Increase in pests (weeds and animals).

#### Water

Impacts on waterways, rivers and estuaries due in part to decreased rainfall, increased nutrients leading to algal blooms. This will have flow on impacts on adjacent vegetation from increased salinity and impacts on aquatic biota. Competition for access to water.

#### Landscape

Soil erosion either due to wind erosion or water erosion when the rains finally return. Bushfire risk from dry vegetation threatening all environments (increased fuel load). Long term impacts on natural systems such as peat swamps, increased salinity, changing vegetation communities and ultimately changing whole ecosystems.

#### Social

Reduced amenity, and quality of life, such as dying gardens, lack of water for recreation (e.g. swimming, need for shade).

### Aboriginal Reference Group

#### Vegetation

Death of plants leads to an increase in fire loads. Implications for cultural burning and fire management into the future.

Shallow rooted species most at risk, which can include bush food plants. If foods aren't in the bush, then family gathering times don't happen (social impact).

Revegetation needed.

#### Water

Estuaries and lakes have lost their wildlife. The amount of salt in rivers has increased and had a flow on effect on aquatic biota.

#### Social

Mental health impacts. Lack of recreational opportunities (e.g. fishing). Lack of bush foods, leads to less family gathering opportunities on country.

### Land and Water Reference Group

#### Vegetation

Changing vegetation, not just deterioration. Some species may be expanding range. Fire impacts due to drought may impact seed set of key species. Loss of ecological niches (e.g. montaigne heath)

#### Economic

Loss of agricultural production and flow on impacts into local economies and communities.

#### Climate

Increased variability in weather conditions and slightly more intense events (eg. droughts followed by floods). Important to recognise that impacts span a spectrum and may be cumulative. For example a drought may not be seen as severe, but impacts might be greater due to a lack of recovery between stress events.

#### Water

Water allocation will be an issue. Balancing of water access between economic and environmental needs, as well as allowing for groundwater recharge may be contentious.

Encouraging community ties socially creates a more resilient community in time of stress. Impacts highlighted by grower groups and agronomists interviews include financial impacts, mental stresses and water security that are exacerbated if the need for water carting is required. Impacts on farm enterprise were also noted such as stocking, spraying, affecting decision-making with risk aversion and reducing progressive measures.

## **Drought risks**

The risks of drought can be understood from the impacts of drought. This section focusses on the risks not previously identified in this document; however it does not include all risks of drought. Access to water and competition for access during periods of drought was seen as a key risk, especially competition with other industries.

Farmer champions interviewed identified that investment in natural resource management and natural capital protection activities were the first to be cut. It can be assumed that they are also the last activities to be reinstated post drought. Consideration needs to be given to establishing a process for identifying the local impacts of drought on natural capital, and what natural resource management activities would be required to enhance recovery. This information should form an externally funded recovery project, with consideration given to the use of incentives to ensure co-investment, and to reduce the economic impact of these activities on farm recovery.

Communications around these types of projects needs to be clear and transparent and highlight that this is a recovery activity to repair our collective natural capital, not a handout.

Increased bushfire risk is a likelihood of drought. The drier than average conditions can lead to vegetation drying and death, leading to a potential increase in fuel load. Bushfire frequency and ferocity is a risk to natural capital, with impacts on vegetation health, condition and recruitment. Disturbance to these ecosystems by fire can also lead to increased weed incursions and the lack of groundcover post fire can increase the risk of erosion. Drought can also increase the probability of ignition and the rate at which fire spreads.

The broader context of a drought needs to be considered when assessing appropriate management interventions and projects. The time since last drought and an understanding of where the local area might be in the recovery process is needed. Small, yet frequent droughts, has a serious potential to undermine resilience and recovery.

Mental health has previously been identified as an impact; however, the long-term mental health risks need to be considered. It is important to recognise and consider the impact on children growing up in stressful environments that can be caused from the impacts of drought.

On farm, an economic risk of drought includes destocking and restocking. Access to appropriate stock and within a necessary timeframe and within budget when a whole area is attempting to restock can be difficult. The ability to retain people within small communities where agriculture is a significant employer can be difficult. Reducing the expense of staff can be one of the cost reduction initiatives, resulting in the need for some families to relocate. This has the potential to lead to additional impacts on communities, with reduction in school numbers, and impacts on other community services.

## Regional needs, priorities and themes to inform investment planning

Interviews with champion farmers, grower groups and agronomists provided extensive input into possible regional priorities including:

- Access to water. Water is critical during drought. Consideration needs to be given to reducing distances between off farm water sources, potentially through increasing community water sources. Investigating alternative water sources, e.g. desalination.
- Peer to peer learning. Opportunity to learn from other regions about their experiences e.g. learning from inland (WA eastern wheatbelt) experience. This needs to include opportunities for intergenerational transfer of knowledge and experience.
- Communications - broad and diverse methods of communication needs to be considered. This needs to include timely information around topics like accessing water in the local area.
- Innovation projects to include components like a cost benefit analysis. For example, extending information around desalination and how it works would be well supported by additional information provided by a cost benefit analysis. This would help to improve decision making and possible uptake. Important to recognise the role that government and independent community groups (such as grower groups) have in extending this type of information.
- Access to mental health support in regional areas. This was supported by community consultation, which identified the need to begin planning for this type of support early to build trust and increase likelihood of service access.
- Salinity, both through primary and secondary salinisation, is an issue that exacerbates drought planning.
- Protection of marginal landscapes.
- Education is critical to support drought resilience. This need to information on the reality of change, droughts and environmental impacts.
- These regional needs and priorities have been further refined and developed into projects and included in the project list section. Projects have been grouped around three key strategic priorities as identified by Great Southern Development Commission. These are:

**STRATEGIC PRIORITY ONE:** Grow the self-reliance and performance (productivity and profitability) of the agricultural sector.

**STRATEGIC PRIORITY TWO:** Improve the natural capital of landscapes for better outcomes.

**STRATEGIC PRIORITY THREE:** Strengthen the wellbeing and social capital of rural, regional and remote communities.

## Enhancing community and industry resilience

The Oxford Dictionary defines resilience as:

noun

1. the capacity to recover quickly from difficulties; toughness.  
“the often remarkable resilience of so many British institutions”
2. the ability of a substance or object to spring back into shape; elasticity.  
“nylon is excellent in wearability, abrasion resistance and resilience”

Looking at resilience through the lens of drought scenarios, there are a number of mechanisms available for promoting community and industry resilience. These include:

- Strengthen links between community members
- Water access
- Planning and preparing for drought, which should include a locally relevant definition
- Communication and information access. Information needs to be provided to the right people at the right time.
- Understanding. This could be supported by benchmarking of regions or localities and provide an understanding of where these areas sit on a scale of resilience. This could also be used to identify opportunities available for improvement.

Champion farmers that were interviewed good quality water infrastructure and maintenance the most important dry season or drought mitigation strategy they use along with stock management and precision ag techniques.

The survey also asked farmers what they considered as successful mitigation strategies in their communities and region. The majority of responses highlighted the importance of learning through grower groups and NRM groups delivering proactive extension events along with the importance of bringing people together. Some respondents also noted improved local water supplies that have occurred to improve water security.

Agronomists noted that drought or dry seasons have encouraged better farming practices and planning, bringing farmers attention to improvement required. Some farmers have worked harder to increase drought resilience although there is room for some enterprises to improve their cost structuring and farm planning.

Resilience can be supported by communication. It is important to support communication of drought and dry seasons as something that impacts the broader community. Drought impacts are felt beyond the farm boundary and ensuring that communications recognise that would help to support a drought response that is collaborative, holistic and sustainable.

It is also important to communicate the role that climate has in drought. Input from one farmer champion suggested that the fund needs to be rebranded and to look at climate resilience, as there are a broader range of issues and tools.

This type of broadening would help to incorporate impacts on natural capital that occur post drought (e.g. soil erosion due to excess rainfall). It is also important to reflect that a drought doesn't end the moment the rain starts to fall. There are many impacts that need to be addressed that take time, for example restocking and rebuilding natural capital. It was also suggested that use of the term drought needs to be stopped, as it is a negative term and a blocker.

Grower groups and landcare groups have a critical role to play in supporting drought resilience both at the community and industry level. These groups provide a forum for enabling connection between local farmers, acting as a community support network. They also enable the demonstration of on-ground activities and are valuable in demonstrating locally relevant drought resilience activities. Support for these groups and their activities should be ongoing, which was supported by responses from farmer champions. The farmer to farmer learning opportunities is seen as being invaluable. Support should be above general operating and include training on issues such as mental first aid.

Farmer champions saw financial support as useful in some areas, but unnecessary in others. Support for water access infrastructure was seen as useful, however there was an overall dislike of subsidies. One farmer summed it up as: *"Avoid temptation to offer low interest loans, handouts and grants."* However, incentives should be considered. Incentives are defined as a thing that motivates or encourages someone to do something. Typically, this reduces the risk around new and innovative ideas so that someone will trial them.

One farmer champion highlighted that *"State water grants were very good, focussing priorities on capital water infrastructure input so this was shifted up list of priorities."* Incentives should be considered as an option in the roll out of any new practices, particularly those that have broader benefits. A different champion provided the following comment: *"Supports co-investment projects where farmer matches dollar for dollar, improves motivation and success and addresses sorting"*.

The dislike of financial support was primarily related to subsidizing farm businesses. One farmer champion provided the following: *"Unsubsidised Australian farmers have lead to more resilience and innovation."* Another champion highlighted that financial support is: *"unfair to farmers that do enough to be profitable, and it supports bad managers"*.

Financial support and grants however were seen as highly useful in supporting community events to bring together people and build connection and support. Grants should be considered in building community resilience. When designing a grant program, keep in mind the end user of the application and keep the process as simple and timely as possible.

Awareness and education need to be proactive and support all drought resilience activities at both the community and industry level. Farmer champions identified the need to arm everyone with tools to combat climate change. Some suggested tools included collating and promoting information to tackle dry seasons, management tools for different enterprise mixes, education, and identify what tools are available. This could be compiled and made available through an online portal.

Agricultural consultants need to be included in training and education. Champions identified that there is variable quality amongst consultants and that there is a role for government in assisting with identifying honest brokers and manage good quality information.

Supporting community events, as highlighted above are key. It is important for people to be there for each other, and this can be facilitated through get togethers and community activities.

Access to water was seen as necessary to ensuring resilience. Some options suggested by farmer champions included:

- Increased water storage, dams, catchments;
- Monitoring of community dams;
- Survey of users;
- Investigate options for town-site stormwater run-off and re-use;
- Stocktake of water use and needs on farm. This water stock take is useful to understand needs and enabling pricing of water in the system. Not enough farmers do this;
- Support innovation. Spray water is biggest use of water. Future focus, green-on-green spraying may decrease 90% water use of post-emergent spraying and reduce chemical use as well. Innovations can give results;
- Providing information and education on topics like desalination and finding better water sources on farm and farm hydrogeology;
- Improve and focus on on-farm water management, rather than rely on outside assistance and water supplies.

Water infrastructure needs to be maintained during good times so it can be relied on in the bad times. Ensure that there is appropriate budget allocated for this. This was an issue in the Ravensthorpe area in the last water deficiency period, where it took considerable time to identify who was responsible for community dams before any infrastructure improvements could be made. It is too late to be attempting to find this information when already in a drought.

Planning is seen as critical for resilience. Planning needs to be supported by training and education, supporting farmers to find the weakest link in their farm business, identify tools on how to address this and implement.

### **Information gaps**

A range of information gaps have been identified, many of these are included in the proposed project list. One information gap identified during the community workshop is the voice of the younger generation. Grower groups provide a format for younger farmers to connect with older farmers, however there is a need to include beyond the farmer community.

## Project list

Data generated and discussed above has been used to formulate a series of proposed projects, which are presented below. Where possible, project ideas have been amalgamated.

Within the following tables, each strategic priority for drought resilience, as identified by Great Southern Development Commission is separated into themes. In each theme, actions are grouped around key action areas which are supported by knowledge, innovation and extension; collaboration and capacity; and related policy and planning needs.

Knowledge, innovation and extension is a foundational area. It generates the required learnings to improve our collective understanding of what is required for drought resilience. It is also about sharing those learnings more broadly to ensure that there is a base level of understanding.

Collaboration and capacity are about the ability and the space to work together to achieve drought resilience.



**STRATEGIC PRIORITY ONE: Grow the self-reliance and performance (productivity and profitability) of the agricultural sector.**

**Theme 1: Water access**

**Theme:** Water access - that there is sustainable access to sufficient good quality water to meet on farm needs.

Water is essential for life, and never more so than in a drought. This theme is about enabling sustainable access to water. Sustainable in this context means both in considering the environmental and off farm needs, as well as ensuring consistency of supply.

**Water supply**

- Support the increased use of non-potable water supplies such as groundwater and the use of desalination on-farm (or other alternative technology) by providing access to required knowledge and skills from a regional hydrogeologist.
- Provide funding assistance to farmers and local government to develop alternative water supplies and trial innovative practices to reduce reliance on priority water supplies.
- Through liaison with the Department of Fire and Emergency Services, ensure that priority water assets for firefighting needs are identified and maintained.
- Ensure drinking water protection areas are not impacted and that source protection plans are implemented.
- Ensure continued protection of priority water assets.

**Water quality**

- Ensure that there is access to water testing within the local community to allow for management decisions to be made in a timely manner (e.g. salinity testing).
- Investigate and promote cost effective water quality treatment options to improve water quality on farm.

**Knowledge, innovation, and extension**

- Review community, business, and industry non-potable water supply needs. This information will help to support planning. Investigate options for improving use efficiency.
- Update the 2014 Great Southern Regional Supply Strategy.
- Support through grant funding for on-farm water harvesting innovation.
- Undertake trials to demonstrate desalination options.
- Review options to re-use and recycle water (e.g. saline water under towns).
- Monitoring of groundwater resources to ensure sustainable use.
- Investigate options for dam designs. Look to nature for design options and trial technologies to reduce evaporation and increase water retention. Look at the role of smart farm technology in managing on farm water.
- Provide a yearly notice on the water supplies within the local area and how to access (e.g. standpipe locations and access process). This could be sent out with shire rate notices.
- Monitor and model potable ground water resources.
- Increase water efficiency through communications and regulation.
- Promote and communicate information to farmers to assist better water planning, water storage and water efficiency.
- Support farm water audits, installation of monitoring infrastructure and produce individual water management plans with recommendations for improvement.

**Collaboration and building capability**

- Provide education and support to farmers to capture and store as much non-potable water as possible.
- Increase farmer's awareness of the capacity of on-farm water supplies to support agriculture.



- Farm business planning to address droughts (access to professional advice) including farm planning (e.g. land use, water, infrastructure etc).
- Lobby government to introduce rebates for water infrastructure installation on-farm.
- Reinstate a regional hydrologist to provide independent advice to farmers.
- Provide training in water quality testing and advice on equipment to farmers (e.g. easy to use, economically feasible, hand held devices).

### **Supporting policy and planning needs**

- Water deficiency declarations - the process needs reviewing and updating.
- Continue to maintain community water infrastructure needs such as to provide reliable infrastructure when needed during a drought.

## **Theme 2: Innovation**

**Theme:** Support the continuing evolution of agricultural practice

Western Australian farmers are highly innovative, especially in dryland agricultural areas. This innovation ought to be celebrated and supported.

### **Farming innovation**

- Continue to support on-farm innovation (no till, low input farming, cropping, technology).
- Support land managers to use available industry approved tools to calculate carbon footprint and to make management decisions to mitigate the impact of climate change, drought and dry seasons on land and economic assets.

### **Smart farm technology**

- Support the adoption and use of technology related to water management and use on farm.

### **Knowledge, innovation, and extension**

- Continue to support local grower groups who provide a valuable role in extension, demonstration and building networks and typically function as a first point of contact.
- Provide more detailed crop and pasture modelling based on south coast soil types and climate scenarios.
- Identify local champions that are implementing climate change adaption and dry season/drought preparation on farm, document and share widely. Share information about practical and achievable on farm mitigation of climate, dry season and drought impacts.
- Work with grower groups in research and development specific to best management practices for different soil landscape types.
- Share stories and messages about dealing with difficult seasonal conditions to ensure that knowledge is not lost. This should be supported by development and promotion of case studies and demonstration sites.
- Use demonstration sites to increase awareness and encourage adoption of effective on-ground works and appropriate innovation by land managers.
- Improve farmers knowledge and skills relating to infrastructure and practices to mitigate climate change, dry season and drought.
- Ensure that there are appropriate resources available to support smaller landholders, who may not typically have the same knowledge and skills as larger land managers.

### **Collaboration and building capability**

- Support local community and production groups as well as land managers to implement drought adaption initiatives.
- Engage with key industry stakeholders (MLA, GRDC) and local grower groups to continue to identify options and opportunities for collaboration.

### **Supporting policy and planning needs**

- Protection of high value agricultural land (water collection).

## **Theme 3: Planning**

**Theme:** Planning: agriculture and associated businesses in the inland Great Southern are supported by good planning and access to information.

Ensure agriculture planning (farm planning, drought planning (indicators, etc) is built on a solid foundation of locally relevant information.

### **Climate knowledge**

- Increased understanding of climate and weather patterns and forecasting by farmers. This will enable better understanding of seasonal outlooks, which will in turn support planning and management decisions on farm.

### **Farm planning**

- Financial assistance for whole farm planning, planning to address bushfire risk, planning drought tolerant gardens etc.
- Continue support for the Farm Management Deposit Scheme allowing farmers to make tax deductible deposits.
- Support farmers to develop drought specific sections of their farm plan that identifies drought actions. The plan should identify the triggers for specific management actions to be implemented (e.g. destocking, how to destock and protect herd/flock genetics, etc.)

### **Drought**

- Continue to improve measurements of drought impact, how it is measured, and how it is reported.

### **Knowledge, innovation, and extension**

- Promote a definition of drought and the drought criteria established through this project.
- Promote drought forecasting, use of seasonal outlooks and other information to forecast the likelihood of drought and communicate this information broadly to farmers and the general community.
- Risk assessment training – provide training where required, on how to carry out a risk assessment.
- Drought is a serious risk to farm businesses and ought to be planned for appropriately.

### **Collaboration and building capability**

- Showcase the innovation, collaboration and capacity building that is occurring within the region.

### **Supporting policy and planning needs**

- Establish an agreed Western Australian definition of drought.

## **Theme 4: Diversification and value adding**

**Theme:** Diversification/value adding (expanding the income base).

### **Carbon farming and carbon neutrality**

- Promote carbon farming opportunities, including the ecological and economic perspective

<ul style="list-style-type: none"> <li>• Provide support to land managers to understand carbon footprint, options for reduction.</li> </ul>
<p><b>Alternative energy</b></p> <ul style="list-style-type: none"> <li>• Promote opportunities for diversification through alternative energy opportunities (e.g. hydrogen/ wind).</li> </ul>
<p><b>Value adding</b></p> <ul style="list-style-type: none"> <li>• Promote opportunities to value add to existing commodities.</li> </ul>
<p><b>Tourism</b></p> <ul style="list-style-type: none"> <li>• Understand the impact of drought on tourism through a risk assessment approach.</li> </ul>
<p><b>Knowledge, innovation, and extension</b></p> <ul style="list-style-type: none"> <li>• Ensure that there is a solid understanding of the strengths, weaknesses, opportunities and threats to being involved in the carbon market.</li> <li>• Improve understanding of the impacts of drought on the supply chain. Identify what businesses may be impacted by drought. This information could be used to broadly increase awareness of the impacts of drought beyond the farm boundary.</li> </ul>
<p><b>Collaboration and building capability</b></p> <p>No projects identified.</p>
<p><b>Supporting policy and planning needs</b></p> <p>No projects identified.</p>

**STRATEGIC PRIORITY TWO: Improve the natural capital of landscapes for better outcomes.**

**Theme 1: Monitoring of environmental condition**

**Theme:** Monitoring of environmental condition.

It is impossible to manage what you don't monitor. Timely access to information at the right times is required to ensure that any management decisions are made with the best available information.

Wetlands

- Re-establish the regional wetland monitoring program to provide insight into environmental condition and values of these habitats.

Groundwater

- Re-establish the regional bore monitoring program. Data generated from this monitoring program will provide insight into groundwater trends and help to identify at risk landscapes.

Threatened species

- Identify and monitor indicator species for changes in climate such as the Australasian bittern or the noisy scrub bird.

Knowledge, innovation, and extension

- Monitor climate change over time at a wider range of locations noting changes in pests and diseases, soil and hydrology.
- Ensure that information generated through the monitoring programs is broadly promoted.

Collaboration and building capability

No projects identified.

Supporting policy and planning needs

No projects identified.

## Theme 2: Improving and maintaining natural capital

**Theme:** Improving and maintaining natural capital

Natural capital is the world's stock of natural resources, which includes geology, soils, air, water and all living organisms. Some natural capital assets provide people with free goods and services, often called ecosystem services. All of these underpin our economy and society, and thus make human life possible.

### Vegetation and vegetation management

Revegetate areas including:

- Unproductive agricultural land (identified by farmer), including establishing shelterbelts.
- Riparian corridors. Establishing riparian buffers on streams will help to reduce erosion and improve water quality. Most pollutants (e.g: heavy metals, pesticides etc) and nutrients are attached to sediment particles (usually clay) and riparian vegetation can play an important role in trapping this sediment and its attached pollutants and nutrients before they reach the channel.
- Priority areas as identified in the South Coast Macro Corridor Network report.
- Revegetation areas to include a diversity of locally endemic species, as well as groundcovers, shrubs, and trees.
- Develop revegetation principles, including recommended species that are suitable for surviving drought. Key principle of revegetation is to build connectivity and provide habitat values.
- Protect areas of existing revegetation. Improve condition of the existing areas of native vegetation, through reduction of weeds and pests.
- Promote the use of perennials and native grasses in the farm business.
- Provide resources and support for weed and pest control to reduce impacts on recovering/regenerating landscapes.
- Identify priority areas for carbon plantings and increased soil carbon storage.
- Monitor increased fire risk with vegetation management and fire research.

### Soil health

- Promote actions to improve soil health (e.g. increased soil cover, organic matter) and ensure that actions are implemented to retain a vegetative cover/structure to protect topsoil.
- Promote actions to increase carbon and microbes in soil, increasing soil resilience - to help the soil act as a sponge.
- Utilise a devolved grant or incentives to drive behaviour change in key areas of soil health, including but not limited to addressing soil acidity and maintaining ground cover.

### Catchment hydrology/management

- Promote the principles of rehydration and support the process through education and funding for on ground actions/trials/demonstrations.

- Protecting all water courses with natural vegetation addressing erosion and poor water quality issues.
- Build resilience by large scale re-vegetation, build connectivity and improve mosaic landscapes.
- Use a Southern Incentives style fund to implement fencing, buffers, revegetation, invasive species management, surface water management etc.

**Regenerative agriculture**

- Promote and support the principles of regenerative agriculture.
- Promote the principles of grazing management (native pasture species, rotational grazing).

**Knowledge, innovation, and extension**

- Marketing of good land stewardship (e.g. case studies).
- Update existing catchment plans, where necessary, to support holistic landscape scale actions.
- Quantify the impact of salinity on agricultural land and likely future extent.
- Evaluate landscape for economic profitability, promote options for land use change if not profitable
- Collect more information on threatened species biology and ecology particularly climate tolerances.
- Increased knowledge of the interactions between carbon dioxide, rainfall and temperature on crops, pastures and forestry.
- Use demonstration sites to increase awareness and encourage adoption of effective on-ground works and appropriate innovation by land managers.
- Continue updating and implementing the Regional NRM plan (Southern Prospects). Provides a regional context and framework for catchment management.
- Continue to support grower groups as a mechanism for extension of information.

**Collaboration and building capability**

No actions identified.

**Supporting policy and planning needs**

Build climate projections into threatened species recovery plans

**Theme 3: Rehydrating landscapes**

**Theme:** Rehydrating landscapes

**Rehydrating landscapes**

Rehydrate landscapes. Promote the principles of rehydration and support the process through education and funding for on ground actions/trials/demonstrations.

**Knowledge, innovation, and extension**

Investigate the concept of small water cycle and how this applies to the inland Great Southern.

**Collaboration and building capability**

No actions identified

**Supporting policy and planning needs**

No actions identified

## STRATEGIC PRIORITY THREE: Strengthen the wellbeing and social capital of rural, regional and remote communities.

### Theme 1: Strong and healthy communities

**Theme:** Strong and healthy communities

#### **Social connections and community support**

- Support and promote community events. Where possible, tap into existing community events. This has the advantage of not adding to the load of community members.
- Provide support for local government areas during droughts (ie. provision of officers linked to LGA's or existing landcare services to help deliver community support).
- Develop a community support framework. Identify key opportunities for growing resilience. The framework will outline options for future input from communities to formulate support actions and identify existing community events.
- Provide opportunities for younger individuals to contribute to the future of the region.
- Encourage connection between generations - including older and younger farmers.
- Liaise with the Department of Education on activities to include in schools during periods of drought, to minimise the impacts of household stress on the younger generations.
- Local leader/facilitator/connector/of the community identified (not necessarily someone from the shire), leadership in rural towns. A person in every town who is able to facilitate attendance at different events. Needs to be well thought out - community member who is proactive and well connected, could be a network to minimise stress and encourage ability to involve any interested people.

#### **Supporting cultural heritage**

- Ensure that cultural heritage management plans include the threats from climate change, drought and dry season.
- Communicate the potential climate responses and drought likelihood to Aboriginal people and managers of non-indigenous cultural sites.
- Conduct vulnerability assessments of both Aboriginal and Settler sites.
- Increase capacity and collaboration with T.O. groups to help them manage key remnant vegetation sites and buffer climate change, drought and dry season impacts .
- Provide opportunities for on-country projects, recognising that on-country activities enable intergenerational transfer of knowledge and build connection to country.

#### **Visual amenity/water availability**

- Maintain community dams/non potable water supplies.
- Maintain green spaces in towns during drought events. This could include ensuring that town spaces are vegetated with endemic, drought tolerant species. These could act as demonstration sites for drought tolerant gardens.
- Improve water security for strategic community water supplies.
- Provide water supplies for school ovals, town ovals, recreational facilities.
- Support towns in water re-use programs (sewerage, harvesting water, re-use of grey water).
- Increase firefighting tanks and supply of non-potable water.
- Provide buffer tanks to support regional communities from the scheme standpipe.
- Funding for innovative solutions for our strategic community supplies.

#### **Health**

- Provide access to ongoing mental health support (during and post droughts) and wellbeing activities. Support activities to extend beyond the farmer and recognise the impacts of family stress on children.
- Support volunteers and ensure appropriate access to training and skills. Include training in mental health first aid.

- Communities need to be adequately supported to avoid burnout. Where should government be intervening to alleviate burnout and stress (not contribute to it)?
- Increase the normalcy of mental health support so that there is someone people can talk to (e.g. include regional men's health at all events (not just drought events)).
- Regional doctors trained in mental health.

### **Support the local economy**

- Economic diversification
- Business attraction to regional towns
- Private co-ops support communities
- Tourism opportunities

### **Knowledge, innovation, and extension**

- Invest now - preparedness and early messaging to ensure that communities and business are prepared for drought.
- Develop an annual drought notice that includes water resources, other support services, and how to access. Notice to be sent out by local government with the rates notices.
- All agencies maintaining their websites with contact details.
- Preparedness - do the work before the drought so that people/groups/volunteers are not overwhelmed.
- Local governments and local landcare groups updated on drought assistance, what's available and where to go for support/additional information. They are often the first port of call for land managers.
- Develop and maintain a drought information hub (website) to collate and provide information and resources for drought. This could include management resources, contact details, forecast information. Ensure there is clear and defined responsibility for management/updating.

### **Collaboration and building capability**

- Resilience is about attitude adoption and cultures. Ensure that communications are worded in a supporting manner, not negative.
- Build in capacity for extra resources that are needed in local communities during difficult times.
- Provide opportunities for catchment groups, especially during drought and post drought recovery. As they are currently project focussed, there is no available capacity to enable this without substantial workload increases and stress.

### **Supporting policy and planning needs**

- Update water strategies for LGA's
- Develop a drought policy, defined for WA conditions
- Assessing and addressing bushfire risk in all developments.
- Ensure the impact on infrastructure from drought is considered (e.g. waste water treatment).

There are a range of resources that will be useful in future planning for drought. Titles and links to these documents are included below.

### **South Coast Macro Corridor Report**

Available for download here: <https://southcoastnrm.com.au/wp-content/uploads/2022/05/WA-MacroCorridorReport-Full-WEB.pdf>

This report identifies critical areas for revegetation to promote landscape scale connectivity.

### **Threatened Species and Ecological Communities Regional Strategic Management Plan**

Available for download here: <https://southcoastnrm.com.au/wp-content/uploads/2022/05/Threatened-Species-Ecological-Communities-Regional-Strategic-Management-Plan.pdf>

This plan identifies actions required to protect threatened species, including identifying the impact of climate change on these species and communities.

### **Identification and Conservation of Fire Sensitive Ecosystems and Species of the South Coast NRM Region**

Available for download here: <https://southcoastnrm.com.au/wp-content/uploads/2022/05/Threatened-Species-Ecological-Communities-Regional-Strategic-Management-Plan.pdf>

## **GLOSSARY**

FBG Fitzgerald Biosphere Group

FDF Future Drought Fund

GSDC Great Southern Development Commission

NRM Natural resource management

NSPNR North Stirlings Pallinup Natural Resources

RDRP Regional Drought Resilience Plan



# 24 APPENDIX

## Appendix 1. Grower Group questionnaire



### Regional Drought Resilience Planning - Grower Groups

South Coast NRM are running a consultation process for the Great Southern Development Commission to inform the Regional Drought Resilience Plan for the Great Southern region.

These plans are funded by the Future Drought Fund, which is a long-term investment fund that provides a sustainable source of funding to help Australian farmers and communities become more prepared and resilient to the impacts of drought. Commencing in 2020-21, \$100 million will be invested annually in projects across Australia.

The plan will identify priority actions that will underpin communities' applications for funding to help them prepare for, and respond to, drought. The Plan will focus on innovative ways to build regional drought resilience across the agricultural sector and supporting industries, through a collaborative and evidence-based approach.

Plans are due for completion in June 2022.

Phase one of the project includes a drought vulnerability assessment to gain an understanding of each LGA's/Regional group susceptibility to drought. This aspect of the project will include the development of region-specific agreed definition of drought resilience, identifying and mapping out historical incidence, severity and impacts of drought in the regions, and determining the likely physical, economic and social impacts of drought in the future.

Phase two of the project is the development of the Regional Drought Resilience Plan which includes local priorities and actions as identified by Local Governments, community groups, farmers, and allied industries. The final plan will be supported by an investment framework and business case studies to help target future funding.

Do you accept that your responses will be credited to your organisation and not remain anonymous.

1. What do you see as the biggest impacts of drought?

2. What priorities and/or actions do you feel will help increase drought resilience in the region?

3. Name of Grower Group

4. Do you have any other comments, questions, or concerns?

5. Do you have a recommendation for an appropriate agronomist that could participate in the Drought Resilience survey

## Appendix 2. Farmer champion questionnaire



### Regional Drought Resilience Planning Program Survey

#### Introduction

The Australian government's [Future Drought Fund](#) (FDF) provides \$100 million a year through several different programs aimed at helping Australian farmers and communities become more prepared for, and resilient to, the impacts of drought. One of these programs, the [Regional Drought Resilience Planning Program](#), focuses on developing regional drought resilience plans that identify actions that will build resilience to drought in agriculture and allied industries.

South Coast NRM are working with the Great Southern Development Commission to provide community input to a Regional Drought Resilience Plan (RDRP) under the FDF. Developing an RDRP is an opportunity for farmers, agribusiness and community groups to identify their priorities for drought resilience and put forward project ideas for further development and, ideally, funding under the wider FDF programs. This interview is one opportunity for you to participate in the process.

If you have any questions about this survey, please contact South Coast NRM on 08 9845 8537 or [info@southcoastnrm.com.au](mailto:info@southcoastnrm.com.au)

Any information you provide will be reported anonymously, any personal details will only be for future internal reference for opportunities that may arise with South Coast NRM

1. Date

Name

Shire

Farm District

2. How many hectares of land do you own/manage?

3. Years in the region

- <3 years
- 3-10 years
- 11-20 years
- >20 years

4. What is your enterprise mix? Approximately what percentage of landuse/product?

% Crop	<input type="text"/>
% Beef	<input type="text"/>
% Sheep	<input type="text"/>
Other	<input type="text"/>

5. How would you define the difference between a drought and a 'dry season'?

6. Have you ever been through a drought? If so, when?

7. Are there any any tools or information you use to plan for drought?

8. What do you see as the biggest impacts of drought on you, your family, and your business

9. What do you see as the biggest impacts of drought on your community? This could be impacts to businesses, community groups, natural resources and environment (water, soil, vegetation)?

10. What have you done to minimise drought?

11. What strategies in your community or region in response to drought and how do you feel about their success?

12. What priorities and/or actions do you feel will help increase drought resilience in the region?

13. What could the government do to support the community and farmers to prepare for future droughts?

14. What is your age demographic?

- <25
- 25-40
- 41-65
- >65

### Appendix 3. Agronomist questionnaire



#### Regional Drought Resilience Planning – Agronomists

South Coast NRM are running a consultation process for the Great Southern Development Commission to inform the Regional Drought Resilience Plan for the Great Southern region.

These plans are funded by the Future Drought Fund, which is a long-term investment fund that provides a sustainable source of funding to help Australian farmers and communities become more prepared and resilient to the impacts of drought. Commencing in 2020-21, \$100 million will be invested annually in projects across Australia.

The plan will identify priority actions that will underpin communities' applications for funding to help them prepare for, and respond to, drought. The Plan will focus on innovative ways to build regional drought resilience across the agricultural sector and supporting industries, through a collaborative and evidence-based approach.

Plans are due for completion in June 2022.

Phase one of the project includes a drought vulnerability assessment to gain an understanding of each LGA's/Regional group susceptibility to drought. This aspect of the project will include the development of region-specific agreed definition of drought resilience, identifying and mapping out historical incidence, severity and impacts of drought in the regions, and determining the likely physical, economic and social impacts of drought in the future.

Phase two of the project is the development of the Regional Drought Resilience Plan which includes local priorities and actions as identified by Local Governments, community groups, farmers, and allied industries. The final plan will be supported by an investment framework and business case studies to help target future funding.

Do you accept that your name will remain anonymous however your responses will be credited to your organisation?

1. What do you see as the biggest impacts of drought?
2. What priorities and/or actions do you feel will help increase drought resilience in the region?
3. What do you consider as an example of successful on-farm strategies, their point of difference and why?
4. Do you have any other comments, questions, or concerns?
5. Name of Agronomist, Organisation and date of interview

DONE

## Appendix 4. Reference Group Membership

### Healthy Environments

#### Members and attendees at the meeting on the 24th of February were:

Nathan McQuoid - Landscape Ecologist

Sarah Comer - Regional Ecologist with the Department of Biodiversity, Conservation and Attractions.

Angela Saunders - Ecologist with Bush Heritage Australia.

Yvette Caruso - Sustainability Coordinator with the Shire of Denmark

Vicki Winfield

Paul Wettin - Chairperson with The Western Ground Parrot Committee

Sayah Drummond - Communication Officer with the Oyster Harbour Catchment Committee

Mike Wysong - Healthy Environments Program Manager with South Coast NRM

Natalie Reeves = Project Officer with South Coast NRM

Sandra Gilfillan - Black Cockatoo Project Officer with South Coast NRM

Kylie Fletcher - Land and Water Program Manager with South Coast NRM

Johanna Tomlinson - Chief Operating Officer with South Coast NRM

### Aboriginal

#### Members and attendees at the meeting on the 17th of March were:

Lester Coyne: (Chair) Community member, Albany Heritage Reference Group Aboriginal Corporation

Ron Grey: (Vice Chair) Community member

Alison Lullfitz: Community member, UWA researcher (Teams)

Ezzard Flowers: Community member, Wirlomin Noongar Language and Stories Project (Teams)

Shawn Colbung: Community member

Robbie Minitier: Community member, Gnowangerup Aboriginal Corporation (Teams)

Johanna Tomlinson: Chief Operations Officer

Karl Hansom, Restoring Lake Pleasant View Project Officer

Peter Twigg: Cultural Heritage Project Officer (Via Teams)

Kylie Fletcher: Land and Water Program Manager

Natalie Reeves: Project Officer

# Land and Water

Members and attendees at the meeting on the 24th of March were:

Letisha Newman (South Coast NRM),

Deon Utber (DBCA),

Steve Janicke (Community),

Johanna Tomlinson (South Coast NRM),

Sue Mills (Water Corporation),

Nicolie Sykora (DWER),

Mal Parker (PF Olsen)

Natalie Reeves

Ian King (Chair),

Kylie Fletcher (South Coast NRM),

Heather Adams (OHCG),

Tim Overheu (DPIRD),

Sophie Willsher (South Coast NRM)



Appendix 5. Reference Group Consultation Data

Figure 2. Whiteboard populated during consultation with the Aboriginal Reference Group





Figure 3. Whiteboard populated during consultation with the Healthy Environments Reference Group

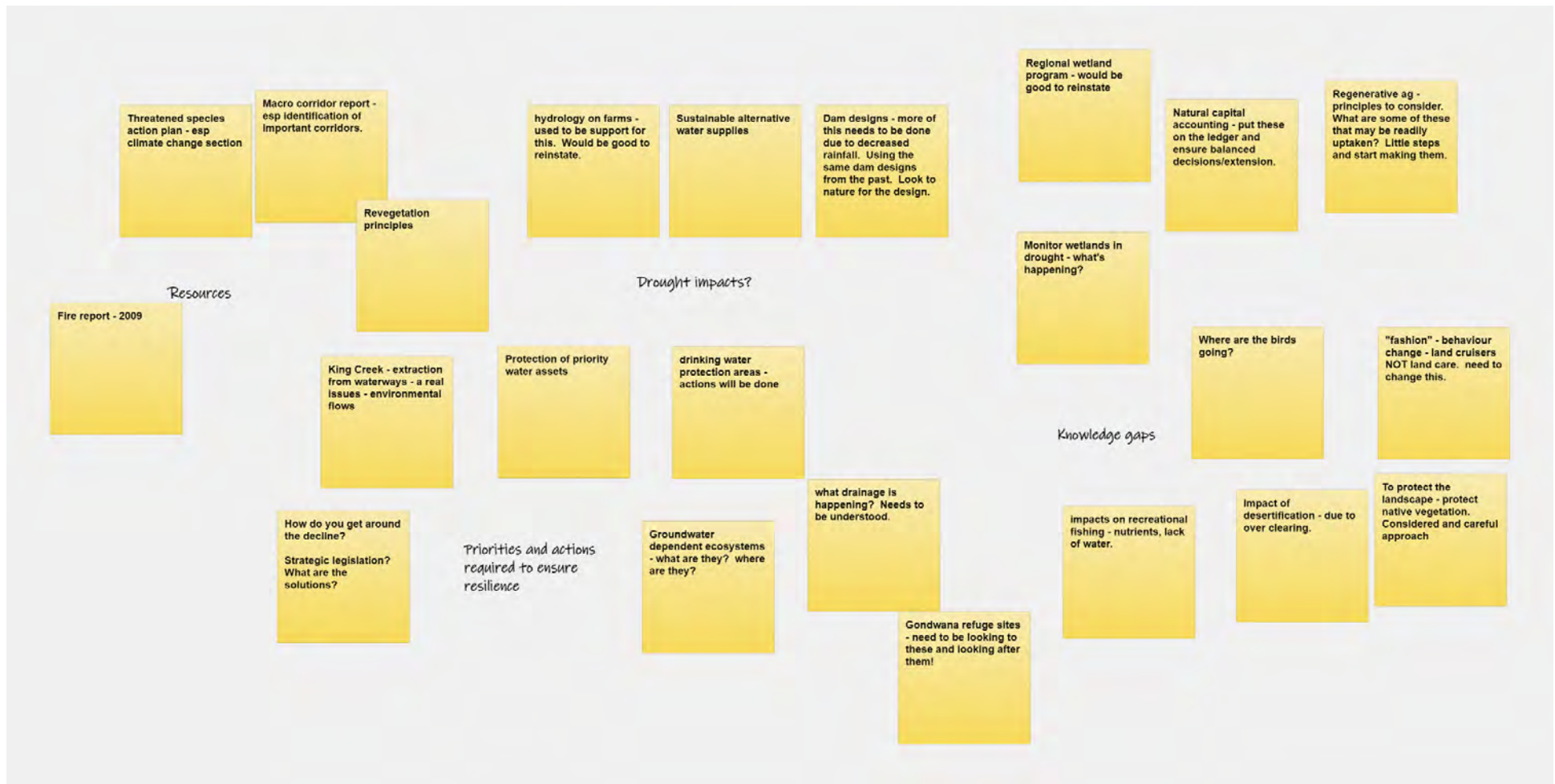
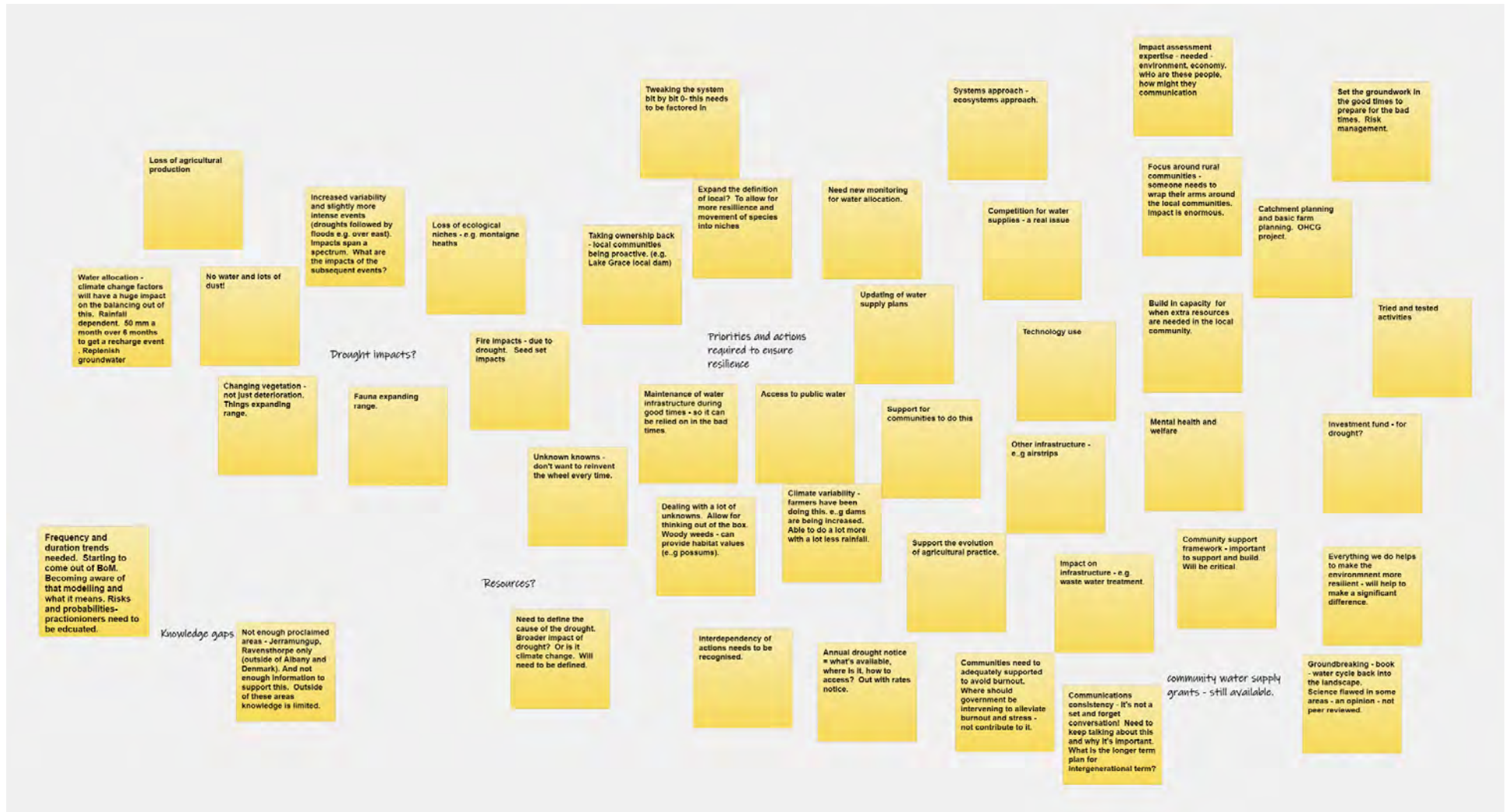


Figure 3. Whiteboard populated during consultation with the Land and Water Reference Group



Appendix 6. Data collected from farmer champions, grower groups and agronomists  
Farmer champion interview data

	Respondent	hectares	lived in area	age	%crop	%sheep	other	define drought	experienced drought	tools, forecasting	direct impacts	community / region impacts	direct mitigation (on-farm)	community / regional mitigation	recommended drought resilience actions	recommended government drought resilience actions
2/5/22 (SoJ)	1	3800	11-20yrs	25-40	0	100		lower average rainfall (bottom 20%) more than 1 season	2020	private forecasting app, BoM and own rainfall records	Production, income, de-stock, impacts business model and planning, Additional time and labour	Natural Resources miss out, soil impacts (ground covers, wind) additional time and labour, Mental impact	dam and catchment maintenance, increased water storage, perennial pasture and fodder	improved local water supplies,	on- farm water management, self-reliance, Need better hydrogeology info and knowledge	extension of information
28/4/22 Shire Broomehill/ Tambellup	2		>20yrs	41-65	72	28		lower average rainfall (bottom 20%)more than 1 season	2010	Field days (learning)	Mentally draining, financial impact, impacts business model and planning,	less spending in community, less employment, impact population size, Mental impact	dam and catchment maintenance, Summer spraying, manage livestock numbers, increase hay storage, research desal, stress management	Grower groups delivering events proactively	Improve town water supplies, self-reliance	Support local grower/landcare groups, scheme water for town, promote best practice farming for drought resilience (extension of information)
27/4/2022, Woodanilling Shire	3	710	11-20yrs	25-40	0	100		hasn't experienced drought	no	Silo database, pasture satellite images, BoM percentile, own rainfall record	Financial impact, social/ mental stress	Natural Resources miss out (1st cut), increase expenses, less commitment to community	Good quality water infrastructure, manage livestock numbers, pasture management, cost management,	events to bring people to get together, need hi tech dams, better catchments	financial course, tools for management	manage good quality information (extension of information), develop tools
22/4/2022, Shire of Kent,	4	10,500	>20yrs	41-65	78	12		Exceptional low yield of crop, destock, low on water for 1 year	2001	own rainfall data, satellite pasture imagery. no confidence in forecasting.	Financial impact, Bigger expense such as wetting agents, impacts business model and planning,	Financial impact, soil impacts, conserve vs exhaust soils, drought vs salinity.	dam and catchment maintenance, Good quality water infrastructure, in-row sowing, Variety selection, soil wetting, change breeding timing, pasture management,	NRM officer, Need larger community dams utilising run-off, monitoring of community dam,	Stop using word drought, this is a negative word and a blocker. Use on-farm techniques (self-reliance).	Farmers need a water stock take and then can price water in the system
19/4/2022, Shire of Gnowangerup	5	13,000	>20yrs	25-40	60	40	agroforest	lower average rainfall (bottom 20%) more than 1 season	no	own records, DPIRD and BoM short and medium forecasts	Biggest issue is climate change, need climate change resilience, change in weather pattern (rainfall trend, frost, seasons, wind, fire, crop stress, extreme events) Increased costs ie. Insurance,	Climate change is biggest impact. Less production is less spending in community, extreme weather events, food security and costs,	Need to address and minimise climate change, reducing emissions and see this as an opportunity, in-row sowing, reduce stocking,	limited large scale actions have occurred.	climate change tools, self-reliance	broader range of climate change tools

	Respondent	hectares	lived in area	age	%crop	%sheep	other	define drought	experienced drought	tools, forecasting	direct impacts	community / region impacts	direct mitigation (on-farm)	community / regional mitigation	recommended drought resilience actions	recommended government drought resilience actions
											fertilisers, water management					
14/4/2022, Shire of Katanning	6	1600	>20yrs	25-40	75	25		multiple years of low rainfall	no	own rainfall record, on-ground inspection, BoM, pasture satellite images	Financial impact, need good planning, adaptive, flexible, paddock scale	less spending in community, Mental impact.	Good quality water infrastructure, and dam and catchment maintenance, soil wetting agents, in-row sowing	grower and landcare group support, variety breeding,	co-contribution capital for water infrastructure	support local grower/landcare groups, peer (Farmer to farmer/0 learning,
8/4/2022. Shire of Cranbrook	7	3000	>20yrs	>65	40	60		hasn't experienced drought	no	no confidence in forecasting.	Financial impact, increase expenditure, need good planning.	improved land management over 20 yrs, more stress in younger farmers.	Planning and early decision, manage livestock numbers and breeding timing.	Farmers are improving water and other strategies. Awareness of looking after the land and improvements over the last 40 years	self-reliance and peer learning	self-reliance

Grower group and agronomist interview data

Group	What do you see as the biggest impacts of drought?	What priorities and/or actions do you feel will help increase drought resilience in the region?	Do you have any other comments?
	Open-Ended Response	Open-Ended Response	Open-Ended Response
Nutrien Jerramungup 10/5/22	Mental health, Farm profitability and the impact flows onto community. Drought/dry season encourages better farming practices and planning, adaptability, better planning.	Water access is paramount. mental health for farmers. Information extension; peer sharing, cross regional learning from drier regions, and farms with 3 and 4 generation learning to newer farmers (1 to 2 generations). Community water sources increased, water storage efficiency ie. reduce evaporation. Additional question - What do you as an example of successful strategy on-farm, point of difference and why? Livestock farmers have worked harder to increase drought resilience. Crop farmers are increasing their efficiency	Farmers take hardest hit in drought, but community and local business impacts, need to attract farm staff, business staff, and support them with facilities in towns.
Farmanco 9/5/2022	Farm profitability and the impact flows onto community. Impacts of dry seasons flow into the next season, affects decision-making the following year. Mentally, financially socially devastating, time to recover	Planning for community water sources. Desalination, potentially very expensive, cost benefit analysis. Assistance with business structure, mental health counselling. Potential to offer cheap finance in difficult drought situations. Additional question - What do you as an example of successful strategy on-farm, point of difference and why? Water sources critical, adaptive farm planning. Salinity is an issue.	Improving water supply. Improve long term forecasting modelling.
Stevi Filipowski, EO North Stirlings Pallinup Natural Resources	increasing impacts over years of drought; mental health, affects decision-making the following year. Impacts financial planning. Risk aversion so farmers halt progressive farming. Soil impacts. Hard learning for young farmers. Unexpected cost; water carting, labour costs, increase feed costs, dams maintenance. Climate changes	Climate change impacts and extension, innovative water management, crop varieties, soil wetting agents. Information extension, communications officer. Investment in reserve supply	Interested in knowing how plan will proceed and where to from here.
Freya Spencer, EO Gillamii Landcare Centre	Mental health. Soil health. Financial impacts, decreased yield, destock and cart water.	Information extension. Improved groundwater data. Recommend FDF funding for a drought planning leaflet similar to Fire planning leaflet that Shires send out with rates. Drought and fire are linked. Need information on community water resources, location, protocols. On-farm drought resilience, whole farm management. Changing climate. Soil impacts.	Need strategic approach and investment structure to drought funding. Community prepare for drought and changing climate. Look for effective and simple solutions, accepted practise. Funding to landcare groups to provide information, and promote drought resilience.

<p>Maddy Wylie, EO Fitzgerald Biosphere Group</p>	<p>Farm profitability and the impact flows onto community. Environmental impacts, soil impact – mainly ground cover, loss of top soil, issues of non wetting , soil erosion, less crop potential.</p>	<p>Peer learning, Mental health, information extension, Proactive planning. Water security, Carting is short term and not sustainable. More information on piped water and desalination. LGA best place to share information.</p>	<p>Reactive response to drought, different rainfall zones. Noted drought hub hosted by FFA provides support for grower base.</p>
<p>Adele Scarfone, EO Southern Dirt</p>	<p>Water security is important for functioning farm. Biggest impact of cost and reliability of water source. Affects decision-making the following year, impacts enterprise planning. Mental health impacts, impacts locally with streetscape in drought, the feel of the town, dry sports oval vs green oval, unwatered gardens.</p>	<p>Improve on-farm water capture and management. Salinity issues. Improved groundwater data (app). Need information on community water resources, location, protocols, rates, need to allow for spray water as well as stock water. Opportunity for investment in infrastructure, maintenance and desalination. information extension</p>	<p>Noted drought funding available for dams and planning water use.</p>

Appendix 7. Social media promotion of the community workshop

**FUTURE DROUGHT FUND**  
**Regional Drought Resilience Plans**

**Great Southern Community Forum**  
Monday 2 May 2022  
1.00 - 3.00pm

Join us online or at your local CRC for a Drought Vulnerability Assessment update for the Great Southern, where we will present key project ideas and priorities to help increase drought resilience.

**Why develop a Drought Resilience Plan** | GSDC and South Coast NRM  
**What defines drought in the Great Southern** | DPRD  
**Drought Vulnerability Assessment** | GSDC  
**Projects to improve resilience** | Participants  
Q & A

visit <https://www.trybooking.com/BYXFM> to book or **scan the qr**

Contact Kylie Fletcher at [kylie@southcoastnrm.com](mailto:kylie@southcoastnrm.com) or 9076 2200 for more info.  
Funded by the Government of Western Australia through the Australian Government's Future Drought Fund and WA's Department of Local, Regional and Economic Development

SOUTH COAST GREAT SOUTHERN REGIONAL DEVELOPMENT

https://www.trybooking.com/BYXFM or by scanning a QR code. The project is managed by the Great Southern Development Commission through funding from the Australian Department of Agriculture, Water and the Environment Future Drought Fund. The workshop will be delivered by South Coast NRM. A link to an online survey is provided: [www.surveymonkey.com/r/droughtresilience](https://www.surveymonkey.com/r/droughtresilience). Hashtags include #drought, #resilience, #planning, #futuredroughtfund, #southcoast, and #southcoastnrm. The post shows 3 shares and a comment section with a 'Write a comment...' field."/>

South Coast Natural Resource Management Inc.  
27 April at 10:27

South Coast Natural Resource Management Inc. invites you to attend a drought planning workshop online on Monday, 2nd May (between 1 - 3pm). This workshop is a great opportunity to help shape a drought resilience plan for the Great Southern Region.

The plan will identify the projects and needs for our region that are essential to underpin our collective resilience to drought. This is your chance to have a say and help shape our regional response to drought.

Register for the event by visiting: <https://www.trybooking.com/BYXFM> or by scanning the QR code.

This project is being managed by the Great Southern Development Commission through funding from Australian Department of Agriculture, Water and the Environment Future Drought Fund. The workshop will be delivered by South Coast NRM.

Can't attend the workshop but are still interested in providing feedback? Check out the online survey: [www.surveymonkey.com/r/droughtresilience](https://www.surveymonkey.com/r/droughtresilience)

#drought #resilience #planning #futuredroughtfund #southcoast #southcoastnrm See less

You and 3 others · 3 shares

Like Comment Share

Write a comment...

## Appendix 8. Workshop Invite

**From:** [Kylie Fletcher](#)  
**To:** [Kylie Fletcher](#)  
**Cc:** [Kaylene Parker](#)  
**Subject:** Drought resilience planning – consultation workshop 2nd May 1 to 3pm  
**Date:** Thursday, 28 April 2022 4:09:33 PM  
**Attachments:** [FutureDroughtFund\\_FactSheet\\_GreatSouthern\\_v4.pdf](#)  
[FutureDroughtFund\\_FAQ\\_GreatSouthern\\_v4.pdf](#)  
[Community Drought Workshop.png](#)  
**Importance:** High

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Dear all,

As part of developing a regional drought resilience plan for the inland part of the Great Southern region, we're holding an online community workshop. This workshop will be a fantastic opportunity to provide input into what's required for the region, as the plan will develop a roadmap of actions to prepare for future droughts.

Here's your chance to find out more about the project and have your say on what's needed to ensure resilience to future droughts!

**Date:** 2 May

**Time:** 1-3 00pm

**On-Line through Zoom – register here:** <https://www.trybooking.com/BYXFM>

You will hear from:

**Kaylene Parker** (GSDC and **Kylie Fletcher** South Coast NRM): Emerging priorities from stakeholder engagement

**Meredith Guthrie** (DPIRD): defining drought in WA – annual rainfall vs. seasonal rainfall: drought, severe drought and the emerging threat of hot drought.

**John Bruce** (DPIRD): regional drought risk and resilience priority areas map incorporating ~50 data sets.

Attached are a fact sheet and a FAQ about the project, along with the workshop flyer.

If you are interested in providing input into drought priorities but are unable to attend the meeting, there is an online survey that is currently open where you can provide input. You can find this at: <https://www.surveymonkey.com/r/droughtresilience?fbclid=IwAR1xHKuSw6Qiu6XFehn6Hy4RQuVpg-sVo1x4oo8E5EKpNqkTCPAMQIUJbVI>

Please forward this invite on to anyone you think might be interested in attending.

We look forward to seeing you online on the 2<sup>nd</sup> of May.

Regards,

Kylie

**Kylie Fletcher**

Land and Water Program Manager





# FUTURE DROUGHT FUND

## Regional Drought Resilience Plans

### Great Southern Community Forum

Monday 2 May 2022

1.00 – 3.00pm

Join us online or at your local CRC for a Drought Vulnerability Assessment update for the Great Southern, where we will present key project ideas and priorities to help increase drought resilience.

<b>Why develop a Drought Resilience Plan</b>	GSDC and South Coast NRM
<b>What defines drought in the Great Southern</b>	DPIRD
<b>Drought Vulnerability Assessment</b>	GSDC
<b>Projects to improve resilience</b>	Participants
<b>Q &amp; A</b>	

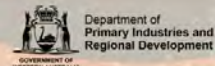


scan the qr

visit <https://www.trybooking.com/BYXFM> to book or

Contact Kylie Fletcher at [kylief@southcoastnrm.com](mailto:kylief@southcoastnrm.com) or 9076 2200 for more info

*This project is jointly funded through the Australian Government's Future Drought Fund and WA's Department of Primary Industries and Regional Development.*



## Appendix 10. Community workshop agenda



### **Future Drought Fund – Regional Drought Resilience Plans**

Great Southern Community Forum: Drought Vulnerability Assessment Update, Consultation Update and Project Review

Date: Monday 2nd May 2022

Time: 1pm to 3pm

Venue: Online <https://us02web.zoom.us/j/89234109967>

Meeting ID: 892 3410 9967; Passcode: 583847

Attendees: Project Advisory Group members, local government Councillors, those stakeholders targeted for consultation including general community.

Workshop aims:

Present the Drought Vulnerability Assessment for the Great Southern, review the vulnerability and adaptive capacity maps & drought definition.

Presentation on preliminary consultation findings to date, feedback on any major gaps.



This program is jointly funded through the Australian Government's Future Drought Fund and WA's Department of Primary Industries and Regional Development

Item	Time	Duration	Topic	Presenter
PRE-EVENT				
	11 April		Contact list collated and invitations to be sent out	South Coast NRM
	20 April		Pre-reading – project overview, drought vulnerability assessment framework, draft summary of consultation	SCNRM option to host information through Southern Soils website
ON THE DAY				
	12:45	15	Technology test	Andrew
	15:00	7	Workshop open. Acknowledgment of Country & overview, outcomes of the <u>workshop</u> ;	Andrew
	15:07	15	Why develop a Drought Resilience Plan? Project overview	Jarrad Gardner (GSDC)/ Kaylene Parker Karen Barlow (DPIRD)
	15:20	20	What defines a drought in the Great Southern? 15 min presentation with 5 mins for questions/comments	Meredith Guthrie (DPIRD)
	15:40	20	Drought vulnerability assessment framework and mapping results 15 min presentation with 5 mins for questions/comments	Kaylene Parker to introduce concept and John. John Bruce (DPIRD)
6	14:00	5	Overview of consultation and themes so far	Kylie Fletcher (South Coast NRM)
7.	14:05	40	Projects to improve resilience - input from attendees  Input to be collected around the following 5 key areas:  Social, environmental, economic	Andrew
8.	14:45	15	Will Besson's infographic - introduce and present.  Q&A, next steps, close  Next steps – projects to be compiled, technical expertise. Feedback to the community on the projects. Opportunity to review the draft plan when its released  Survey - open to the end of the week if you leave today's workshop and find other things you want to contribute.	Andrew
9.	15:00		Meeting close	Andrew
POST-EVENT				
	15 May		Follow up participants with workshop outcomes	South Coast NRM

## Appendix 11. GroupMap results from the Community Workshop

Social Resilience	Environmental Resilience	Economic Resilience
Ongoing consultation	understanding future environmental priorities in an agricultural landscape ↓↑	Ag consultants - reports to tell us how we are going ↓↑
opportunity for younger individuals to contribute to future for the region.	Increasing carbon and microbes in soil, increasing soil resilience - (i) help the soil act as a sponge ↓↑	Declining rainfall - planning infrastructure ↓↑
Prepare early! Once it's happening - it's too late ↓↑	Environmental flows - what remains in the landscape which adds to soil moisture, access as well as manage better and work to improve it - how many and quality of dams in the landscape. Current project by Nick? but doesn't include quality (Tim D) ↓↑	Grants for maintaining catchments ↓↑
Localised mental health training - if going to a dry very late in the game. Train community people, frontline workers. ↓↑	increase trees and diversity across the landscape ↓↑	Fire fighting water - needs ↓↑
Local leader/facilitator/connector of the community (not necessarily someone from the shire), leadership in rural towns. A person in every town who is able to facilitate attendance at different events. Needs to be well thought out - community member who is proactive and well connected. ↓↑	monitor and maintain (or create) abundance and distribution of freshwater habitat	Ag Technology role is playing in drought ↓↑
Encourage connection between generation - including older and younger farmers	measure salinity and include on maps	How well are farm management deposits used, did it help/work? ↓↑
Drought resistant native vegetation in the landscape - so that something still remains green and healthy throughout	evaluate landscape for economic profitability, change landuse if not profitable	Support for on-farm water harvesting innovation ↓↑
All agencies maintaining their websites with contact details - can be a nightmare to find someone to actually talk to. information can be quite old.	evaluation of indicators of change (weeds...)	Smart farm technology ↓↑
Increase the normalcy of mental health support people so that they're someone people can talk to. E.g. include regional men's health at all events (not just drought events)	bringing back the small water cycle - ecosystems approach	funding assistance to help find water resources on farm ↓↑
Catchment groups - pop up person - currently project focussed.	revegetation (not clearing) to manage the water flow	Impact of drought - improve how we measure this (land report) ↓↑
Being able to pick things up on the social side early on - network of people to connect to. E.g. bank managers, contractors, agronomists, etc. Can give generalised information that might give an early signal	more detail - linkage between surface and ground water	Competition for water resources ie. mining ↓↑
Tap into the little imprints/ events (respond to community need rather than top down approach)	Soil moisture (characterisation)	Desalination ↓↑
Keep in mind the longer term - not just short term. Access to support throughout the longer term.	Rehydrate landscapes	GS
Reducing confusion of what's out there	Soil health (erosion, soil cover)	Mental health support
Preparedness - do the work before the drought so that people/groups/volunteers are not overwhelmed. Building relationships.	Regenerative agriculture	Viability of communities/schools
Linking up community network a bit more - assistance prior to drought so they know what's there before drought arrives	Perennials and native grasses	Tipping points for agriculture, ie. crop one year in six, then may see further commodities
What are the community events out there already - not adding to the load	Catchment hydrology - rehydrate landscapes	Decision makers - catchment groups play a greater role
Regional doctors trained in mental health		Scheme pipeline ends Gnowangerup - need to capture on farm water when no other option.
LGA's updated on drought assistance, first port of call		Drought criteria
Water supplies for school ovals/town ovals and recreational facilities		Preparedness?
Community events		Water efficiency disasters - needs reviewing
Opportunities for on-country projects		Farming system - managing for drought
Maintaining green spaces in towns during drought events		How to overcome hand out versus planning
		Farm planning/training
		Challenge in farmers are quite private
		Risk of drought - off farm incomes are massive
		Impact of drought on tourism - risk assessment
		Mining - risks for communities
		Diversification - what else is impacted by drought along the supply chain
		Farm management deposit scheme
		On-farm innovation (no till, low input farming, cropping, technology)
		Farm business planning
		Value add to existing commodities