Eyre Peninsula Drought Resilience Advisory Group
8 August 2024

DRAFT Eyre Peninsula Regional Drought Resilience Plan

A Framework to Guide Future Effort and Investment

DRAFT Eyre Peninsula Regional Drought Resilience Plan

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Revision	Date	Author	Reviewed	Details
V1	1/8/24	E. Mansfield, R. Liew, A. Pannell	A. Pannell, T Forrest	First draft report for Advisory Group review
V2	8/8/24	E. Mansfield, A. Pannell	A. Pannell	Updated draft report following Advisory Group meeting, for public consultation

Contents

Funding acknowledgement

This program is jointly funded through the Australian Government's Future Drought Fund and the Government of South Australia.

This plan has been prepared by URPS for the Eyre Peninsula Drought Resilience Advisory Group.

Acknowledgement of Country

The Eyre Peninsula Drought Resilience Advisory Group acknowledges the Traditional Custodians of the land on which we work, live and play and their continuing connection to land, sea, culture and community. We pay respect to Elders past and present, and we extend that respect to all Aboriginal and Torres Strait Islander people in our community.

In particular, we acknowledge the Aboriginal peoples of the Eyre Peninsula region covered by this Plan, including the Barngala, Nauo and Wirangu peoples.

1. Introduction

Drought poses a major challenge to the future prosperity of Eyre Peninsula's agricultural productivity, regional businesses, natural environments, and communities. As a region heavily reliant on agriculture, the consequences of drought are well known and have long been endured by Eyre Peninsula residents.

The projected increase in time spent in drought over coming decades means that preparing for drought is more important than ever. The cascading ramifications on the farms, farmers, connected communities, economies and natural landscapes of the Eyre Peninsula are undoubtedly more extensive and potentially catastrophic. Every endeavour to prepare, safeguard and "bounce forward" from protracted periods of drought must be considered and developed for the health, vibrancy and sustainability of the community and its agricultural economy.

Drought resilience refers to the ability for individuals, communities, economies and environments to withstand the impacts of drought and adapt and find new and potentially transformational ways of doing things, enabling functions and values to be sustained over the longer term.

Farmers on the Eyre Peninsula are not new to adapting to changing conditions. They have a long history of being leaders and innovators in developing enhanced and new ways to sustain their farms during times of reduced rainfall or other challenges. The region will benefit from leveraging existing strengths and capitalising on new opportunities to enhance drought resilience.

The Australian Government established the Future Drought Fund (FDF) to provide secure, ongoing funding for drought resilience initiatives. Through the FDF, the Australian Government is working with the South Australian Government to support the Eyre Peninsula region in developing a Regional Drought Resilience Plan to prepare for and manage future drought risks.

The Eyre Peninsula Drought Resilience Advisory Group has guided the preparation of this draft Regional Drought Resilience Plan for the Eyre Peninsula. The Advisory Group includes representatives of Regional Development Australia Eyre Peninsula (RDA EP), Ag Innovation & Research Eyre Peninsula (AIR EP), Eyre Peninsula Landscape Board (EPLB), SA Drought Hub, Eyre Peninsula Local Government Association (EPLGA) and Department of Primary Industries and Regions South Australia (PIRSA). URPS were engaged to work with the Advisory Group to develop the Plan.

1.1 Preparing this draft Plan

This draft Plan was informed by information collated through the following tasks:

- Literature review.
- Key informant interviews with local community leaders and subject matter experts.
- Key informant interviews with drought resilience planners from other regions.
- Regional in-person engagement across the 11 Eyre Peninsula councils.
- Aboriginal in-person workshops.
- An online workshop and online survey.
- Regular Advisory Group meetings.

98 community members and stakeholders were engaged, each sharing a diversity of perspectives, experiences and priorities.

This draft Plan contains a summary of the information gathered from these tasks. Further detail and findings from all tasks are described in the Key Insights Paper and Engagement Summary Report prepared for this project.

Quotes from community members and stakeholders collected through the engagement activities are included in the speech bubbles throughout this draft Plan to reflect the personal experiences and views of drought of the community in their own words.

1.2 How to read this draft Plan

There are four key parts to the draft Eyre Peninsula Regional Drought Resilience Plan:

Section 1-2	Introduction and summary of the Plan's goals
Section 3-6	Background to drought on the Eyre Peninsula
Section 7	**The Plan – the vision, goals, strategies and opportunities for action for building drought resilience on the Eyre Peninsula**
Section 8	How the Plan will be implemented

Please skip to Section 7 if you are most interested in the opportunities for action to enhance drought resilience. The remainder of the Plan provides supporting information to contextualise the strategies and opportunities for action presented in Section 7.

1.3 Public consultation on this draft Plan

This draft Plan is on public consultation from 8 – 22 August 2024. All are welcome to provide feedback via the following survey: https://www.surveymonkey.com/r/EPRDR. There will also be four online forums held about the draft Plan, please register via the following link if you would like to attend: https://www.trybooking.com/events/landing/1264872.

All feedback will be considered when finalising the Plan.

2. Summary of goals

Our vision for the Eyre Peninsula

Eyre Peninsula farms, businesses and communities that are strong, sustainable, vibrant and drought resilient.

Our goals

FARMING INNOVATION

Profitable, productive and adaptive agriculture thriving in a variable and changing climate

FINANCIALLY SUSTAINABLE ENTERPRISES

Long-term financially viable businesses and management capabilities

COMMUNITY WELLBEING

Strong individuals and healthy communities working together to benefit the region

LANDSCAPES AND ENVIRONMENTS

Healthy soil, water and biodiversity that sustain productive landscapes

GOVERNANCE AND ADVOCACY

Local, effective and coordinated action led and governed by local people that understand the region

REGIONAL INFRASTRUCTURE AND SERVICES

Future-proofed water supplies, local services and infrastructure that attracts, retains and supports residents

REGIONAL ECONOMIC DEVELOPMENT

Sustainable regional development that contributes to drought resilience

3. The Eyre Peninsula

The Eyre Peninsula Drought Resilience Plan region encompasses the 11 Eyre Peninsula councils from Whyalla in the east, along the Gawler Ranges in the north, to Ceduna in the west. The region covers 44,290 square kilometres (Figure 1).

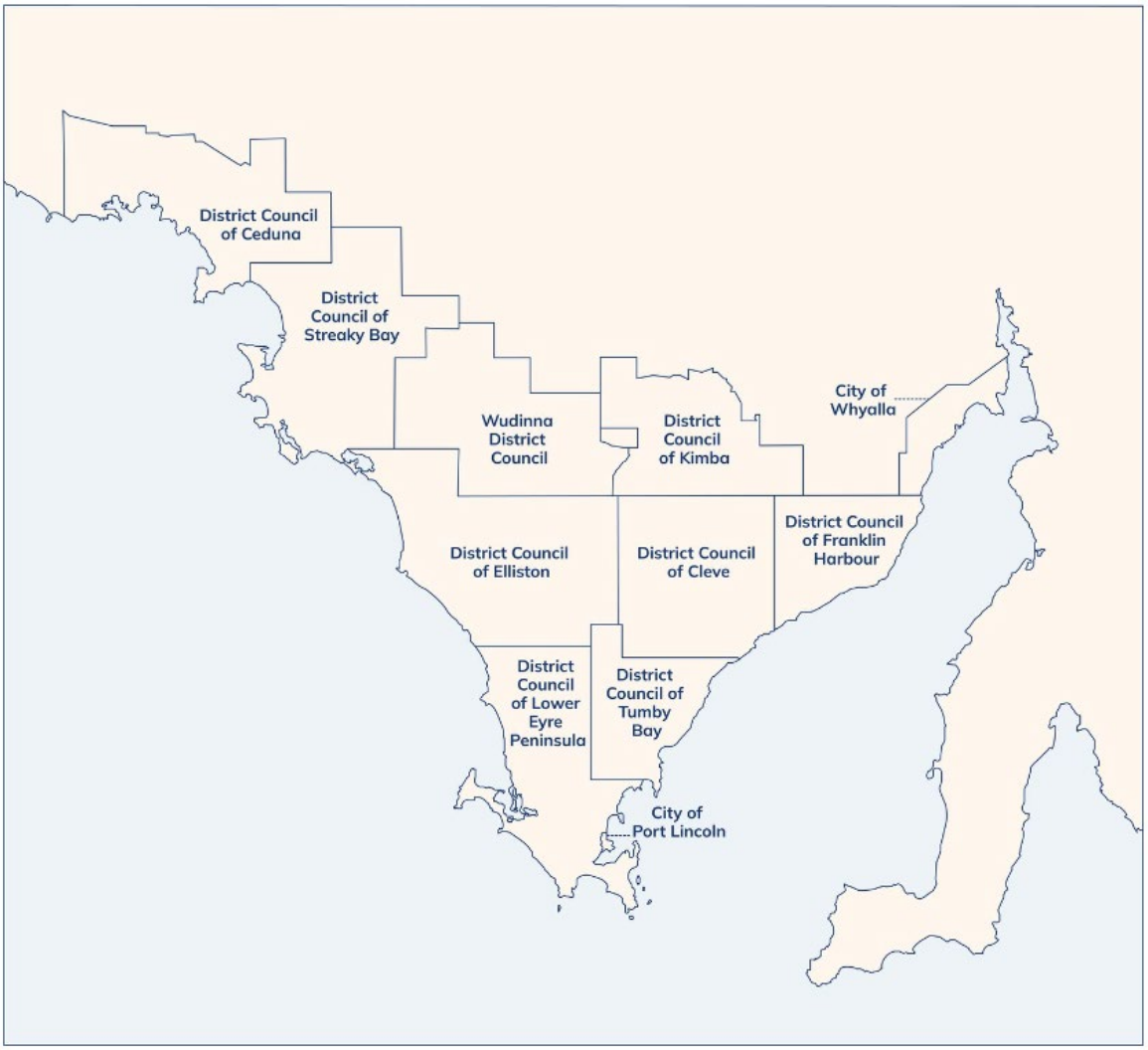


Figure 1 The Eyre Peninsula Regional Drought Resilience Plan region

Some characteristics such as a close-knit community atmosphere, reliance on agriculture and a strong sporting culture are consistent across the Eyre Peninsula. However, other factors vary. Each town has their own characteristics, perspectives, priorities, challenges and needs. Some key characteristics that vary across the region are described in the figure below, including climate, soils and population trends.

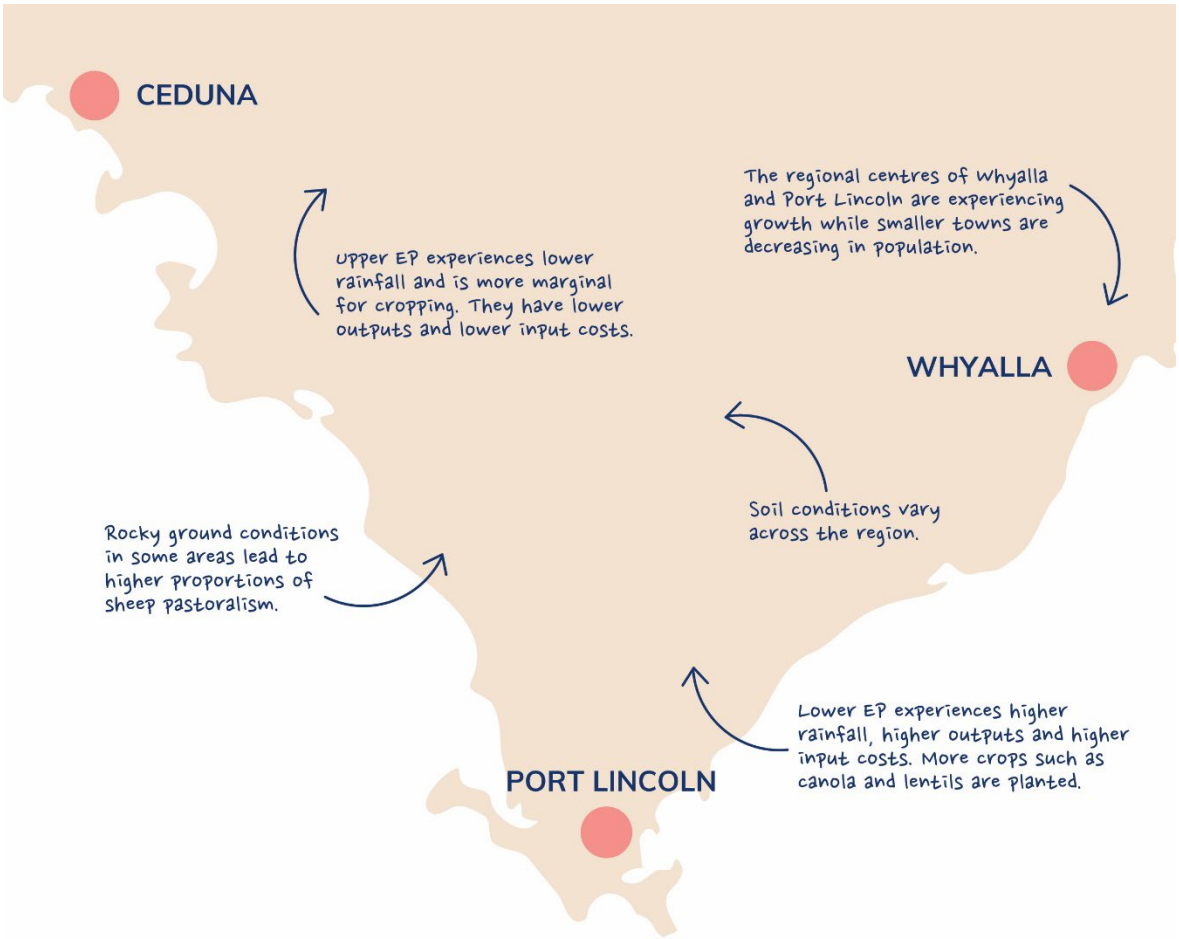


Figure 2 Variance in conditions across the Eyre Peninsula

3.1 People and economy

The Eyre Peninsula's population is dispersed, with major population centres in Whyalla and Port Lincoln and many people living on farming properties. The region enjoys a strong sense of community spirit and connectedness. Agriculture is the highest industry of employment outside the key population centres of Whyalla and Port Lincoln.

Table 1 Key demographics and economic statistics for the Eyre Peninsula region and SA[1,2]

		Eyre Peninsula	South Australia
	**Resident population**	56,265 people	1,781,516 people
	**Median age**	43 years	41 years
	**Highest level of education** **Bachelor degree level and above** **Certificate III & IV Level** **Year 12** **Year 10**	 8.8% 17.7% 31.2% 15.6%	 22.7% 17.6% 15.2% 9.4%
	**Unemployment rate**	2.4%	5.4%
	**Volunteering rate**	18.0%	14.1%
	**Top 3 industries of employment (Entire EP region)**	**Entire Eyre Peninsula region** Health care & social assistance (14.1%) Agriculture, forestry & fishing (12.8%) Retail trade (9.9%)	
	**Top 3 industries of employment**	**Eyre Peninsula region excluding Whyalla and Port Lincoln** Agriculture, forestry & fishing (28.0%) Health care & social assistance (12.4%) Education & training (9.3%)	
	**Total GRP (2022/23)**	**Entire Eyre Peninsula region** $4.467 billion	

DATA NOTE – All economic data has been soured from the RDA Eyre Peninsula Region's economic profile from .id community. The area covered by this data includes all the council areas as well as the far west coast which includes Maralinga Tjarutja (AC) and Unincorporated SA (part).

3.2 Agriculture

The Eyre Peninsula has a productive agricultural industry, with approximately 83% of the region's land area used for cropping or grazing. Dryland broadacre cropping of wheat, barley, canola, lentils, lupins and oats and livestock grazing predominantly sheep for meat and wool are the most common agricultural land uses. Recent market conditions and innovations in farming technology have led to an increase in production of lentils and other pulses, while sheep grazing is in decline.

The region produces approximately one quarter of South Australia's cereal crops and other broadacre crops, valued at $1.43 billion in 2022/23. The total value of agricultural output accounted for approximately 11% of South Australia's total agricultural output in 2020/21.[3]

Eyre Peninsula farmers are challenged by issues that are unique to their environments, as well as constraints that are experienced more broadly across the state. These include:

- Degraded soils, leading to soil acidification, dryland salinity, soil structure decline, wind erosion and water repellence.
- Variable and challenging weather conditions such as low and high rainfall, extreme heat, frost and wind.
- Decreasing populations of small towns.
- Increasing costs of farming inputs driven by global energy prices and geopolitical events[4].
- Fluctuating market conditions, exacerbated by a heavy reliance on often volatile export market.[5]
- Pests, weeds, overabundant native species and diseases.

However, Eyre Peninsula farmers are renowned for their innovation. Research and development led innovations, improved risk management and business decision making, and changes to how land and water resources are managed has led to significant advances in agricultural production in the region. The willingness of Eyre Peninsula farmers to adopt new technologies and make improvements based on research outcomes ensure their farms are on the cutting edge of productivity and profitability.

The agricultural sector plays a vital role South Australia's food production, regional export revenue, and as a foundation of strong and cohesive rural communities. Continuing to support the success of the sector is essential.

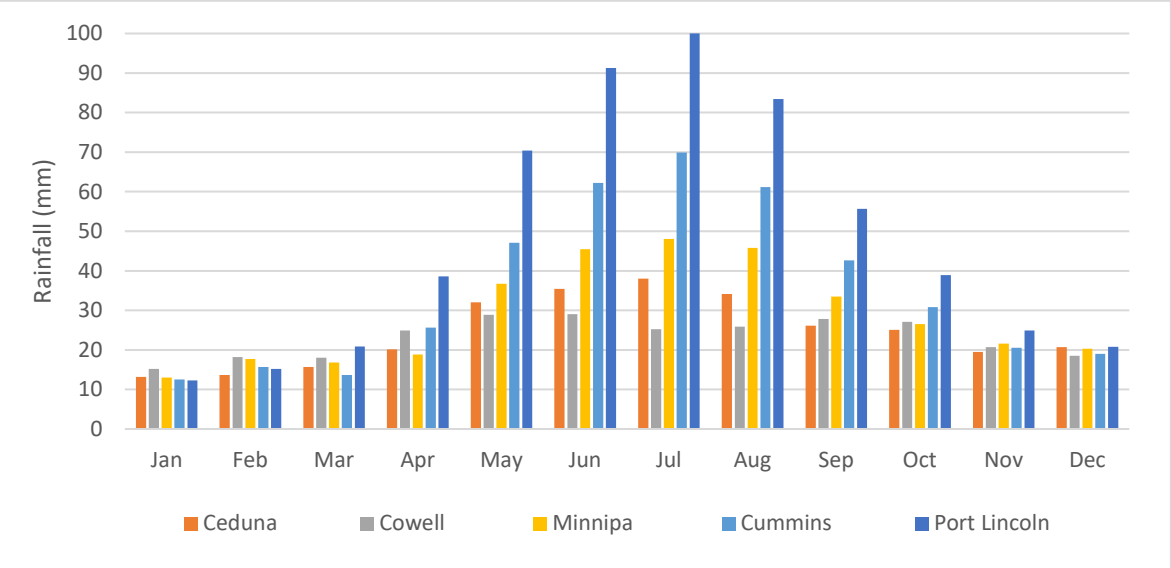
3.3 Climate

3.3.1 Rainfall

The Eyre Peninsula region experiences a Mediterranean climate characterised by warm, dry summers and mild, wet winters. The southern areas have a milder, wetter climate compared with the warmer and drier north and northwest parts of the region.

Average monthly rainfall between 1964 to 2023 for five locations across the Eyre Peninsula is shown in Figure 3. While November to March rainfall is similar at all locations, winter rainfall is significantly higher in the southern locations of Port Lincoln and Cummins.

Figure 3 Average monthly rainfall 1964 to 2023 in towns across the Eyre Peninsula[6]



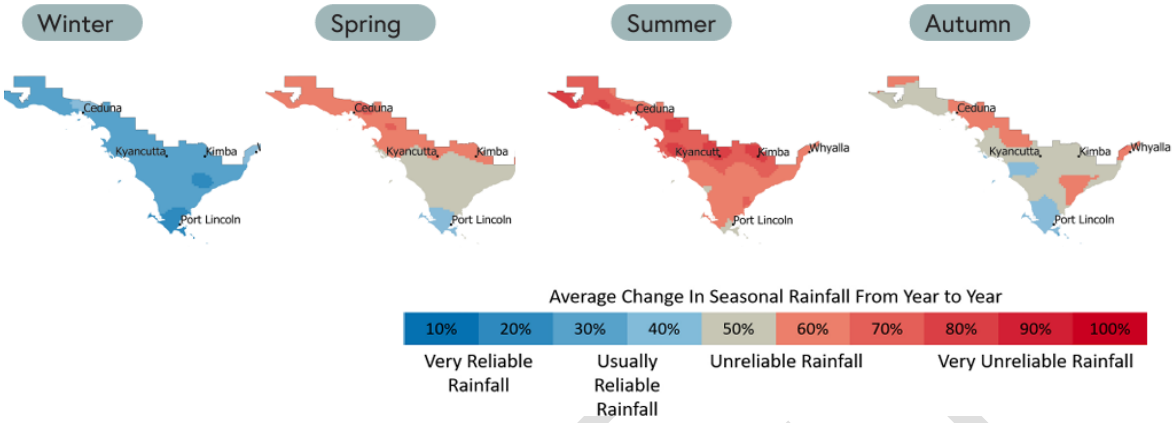
Rainfall has been declining in recent decades. Data from myclimateview.com.au shown in Table 2 shows rainfall has reduced from the period 1964-1983 to 1984-2023, with reductions greater in northern locations.

Table 2 Average annual rainfall change 1964 to 2023[7]

Location	Average annual rainfall (1964 to 1993)	Average annual rainfall (1994 – 2023)	Change
Ceduna	298mm	268mm	-10%
Cowell	297mm	259mm	-13%
Minnipa	346mm	311mm	-10%
Cummins	451mm	429mm	-5%
Port Lincoln	530mm	481mm	-9%

Rainfall reliability maps for 1989 to 2018 (Figure 4) show winter rainfall has been moderately reliable across the region (blue areas), with usually only about 40 mm difference from one year to the next.[8] This contrasts with spring and autumn rainfall, which has been less reliable (beige and light red areas).

Figure 4 Rainfall reliability (1989 – 2018)

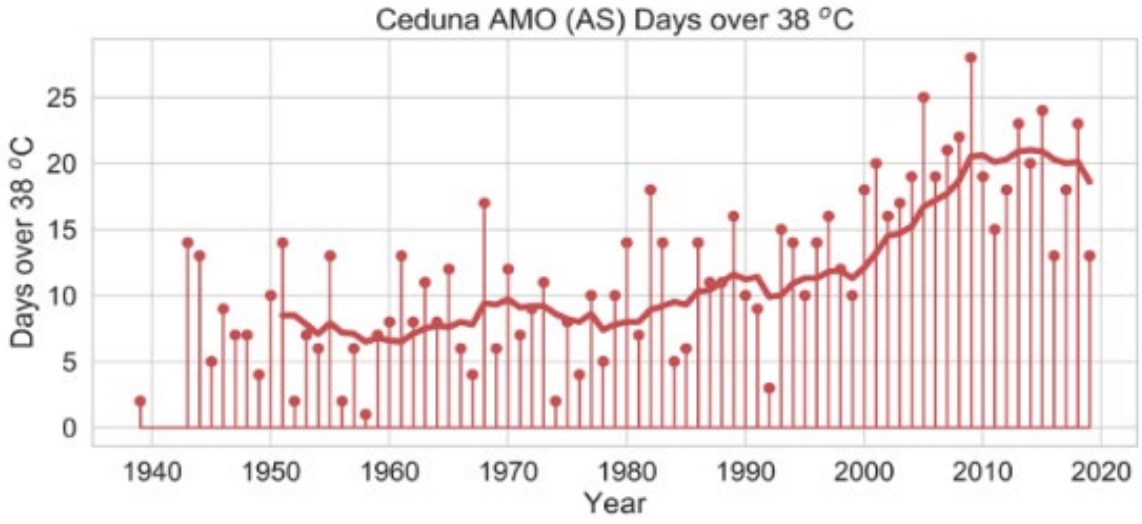


3.3.2 Temperature

The Eyre Peninsula experiences average annual maximum temperatures of 18 to 27 °C and average summer maximum temperatures of 21 to 33°C.[9]

The Eyre Peninsula has experienced more hot days in the past 30 years. Figure 5 shows the annual number of days above 38 °C (red bars) with a 10-year running average (solid red line) for Ceduna.[10] Ceduna experienced an average of 16 days per year above 38 °C between 1989–2018, compared to an average of nine days per year above 38 °C between 1959–1988.

Figure 5 Number of days per year over 38°C



3.3.3 Wind

The Eyre Peninsula is characterised by strong and persistent winds. These winds can cause significant erosion, lifting and transporting topsoil leading to soil degradation and loss of fertility. This process not only diminishes the land's agricultural productivity but also contributes to the dust storms that can affect air quality and visibility and road safety.[11] When vegetation cover is low due to

drought conditions, wind erosion impacts are exacerbated. Wind can also increase evaporation, which exacerbates already dry conditions.

3.3.4 Frost

The average number of frost risk days on the Eyre Peninsula ranges from 0-10 days in coastal regions, to 10-20 days in the central Eyre Peninsula.[12] Frost can have devastating impacts on crop yield. Frosts have tended to occur through dry winter and spring periods, when soil moisture is low and cloud cover infrequent.

3.4 Water resources

There is a scarcity of potable water resources on the Eyre Peninsula. Groundwater is the main source of water for public water supply, irrigation, stock and domestic use.

Table 3 Key characteristics of Eyre Peninsula's water resources

Feature	Characteristics
Groundwater 	The Water Allocation Plan for Southern Basins and Musgrave Prescribed Wells Areas controls the taking and use of most of the fresh groundwater in the region.[13] Three-quarters of the region's drinking supply comes from the Uley South Basin in the Southern Basins Prescribed Wells Area.[14] Expert modelling says water is being drawn from this Basin at unsustainable rates, with recorded water levels 'below' or 'very much below average' in almost half of its wells during the past 12 months. This was despite rainfall in 2021 and 2022 being well above average.[15] The Department for Environment and Water has modelled that underground water resources in the southern basins will no longer be able to sustainably meet the demands for water supply on Eyre Peninsula in the short term. The Water Allocation Plan is currently under revision as a result, with the new plan to significantly reduce SA Water's pumping allowance from the Southern Basins. Alternative water sources will be required to supply the region.
Surface water 	Surface water features on the Eyre Peninsula include watercourses, lakes, dams, wetlands, springs and soaks.[16] Most watercourses are ephemeral, experiencing peak flows during winter, and often ceasing to flow by late spring or early summer.[17] Many wetlands and creeks are saline and unsuitable for drinking.
Water storages	The Tod Reservoir is the only major surface water storage on Eyre Peninsula. Due to deteriorating water quality, this resource has not been used as a water supply since early 2002 and is held as an emergency supply of water only.[18]

3.5 The Eyre Peninsula 'system'

The Eyre Peninsula is a complex system of connections and interactions between people, industries and the natural environment. These connections and interactions mean that when one feature is impacted, flow on effects will be experienced by other features in the system. Considering these connections and interactions is called 'systems thinking'. Systems thinking helps to identify the factors that make the system resilient or vulnerable to change.

Key features of the Eyre Peninsula system include agriculture and water resources, as these have many connections with other valued features. Maintaining agriculture and its connections to other features is integral to the viability of the region, as is provision of secure water supplies. Without viable agriculture and water to support the population, community groups, social fabric, service provision and the regional economy will be at risk.

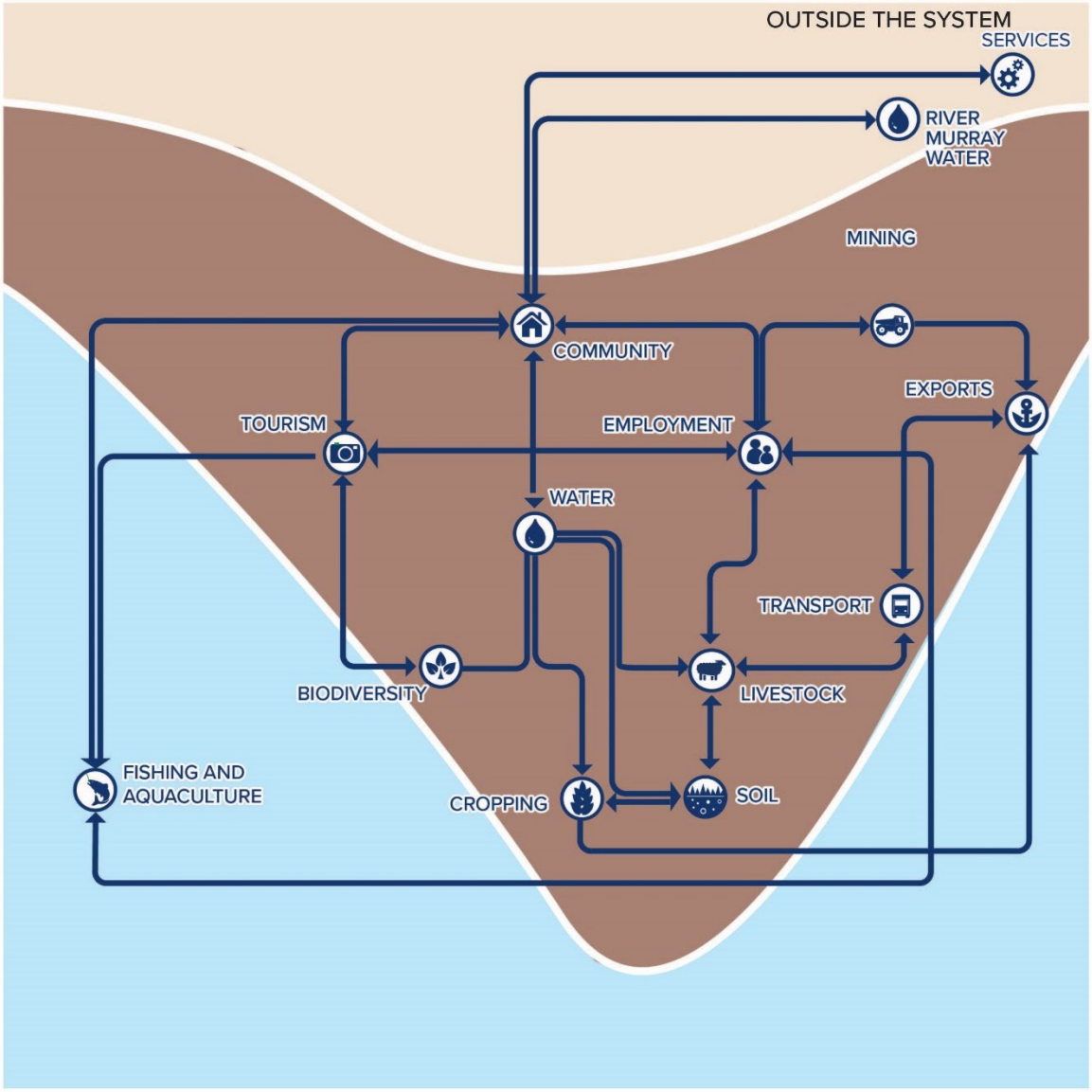


Figure 6 The Eyre Peninsula 'system'

4. Drought

Drought is not simply low rainfall. Rather, drought is a comparatively dry period compared to normal conditions that has an impact on water users including the environment.

For this plan, drought is defined as:

> *A period of abnormally dry conditions that impacts negatively on water availability and agricultural production in a region and, consequently, impacts negatively on the economy and environment of the region and the health and wellbeing of its residents.*

4.1 Drought on the Eyre Peninsula

Drought on the Eyre Peninsula is caused by a number of natural atmospheric conditions including the Positive Indian Ocean Dipole and El Niño-Southern Oscillation. Anthropogenic climate change is also projected to impact on drought conditions. The Key Insights Paper summarises information on these climate drivers developed by the Bureau of Meteorology.

Before European colonisation, the Aboriginal peoples of the Eyre Peninsula region would have experienced numerous drought periods.[19] Since then, the region has experienced a number of significant droughts including:

- The Federation drought: 1895 to 1902
- The 1914 to 1915 drought
- The World War II drought: 1937 to 1945
- The 1965 to 1968 drought
- The 1982 to 1983 drought
- The Millennium drought: 1997 to 2009
- The 2017 to 2019 drought (the Tinderbox drought)

4.2 Drought impacts on the Eyre Peninsula

The impacts of drought on the Eyre Peninsula are profound. The literature and stakeholders have identified the following key impacts.[20,21]

Social impacts

- Reduced mental health and wellbeing exacerbated by loss of income, hard and emotional decision making, stress, loss of hope and shame. This can lead to anxiety, depression, substance abuse, social isolation and suicide in extreme cases.

> "There's a slow, grinding, wears-you-down effect, mentally, financially and physically"

- Stress and wellbeing impacts can lead to relationship breakdowns, domestic violence, impact on children and flow on effects to friends and the wider community.
- When farmers are forced to shoot and bury their stock because it is too costly to send them to market, this takes a major mental toll.
- Reduced amenity associated with a drought affected landscape and flow on impacts on health and wellbeing..
- Population shrinkage as farms and businesses sell, staff are laid off and people move away for job opportunities elsewhere, with flow-on effects including reduced social fabric and township vibrancy, less volunteers, less local business and services, less school enrolments and fewer members in sporting clubs.

Financial and business impacts

- Reduced income on farms as crop yields reduce, and destocking occurs, sometimes at low prices. High input and machinery maintenance costs remain, placing farmers in greater and greater debt. Some farms are forced to sell.
- Young farmers who have had a drought in their first year are particularly affected, with a major impact on their finances and willingness to stay in the industry.

> "I've stitched old sheets together and prayed for new shoes for my kids in drought years"

- Financial hardship for other regional businesses as farmers "tighten their belts" and stop spending as much in communities.
- Agricultural plan derailment as otherwise well strategically planned farming operations have to "thrown out" their plans.
- Changed farming practises as farmers destock, plant different crops which are less reliant on rainfall, or do not plant crops particularly in marginal country.
- Loss of workers, particularly farm workers, other skilled agricultural allied industry workers and young people who are difficult to get back after drought.
- Lack of willingness for younger farmers to adopt family succession plans, instead opting to leave the district or pursue other profession.

Environmental impacts

- Loss of vegetation cover and increased soil erosion, leading to loss of topsoil and dust storms.
- Reduction in water availability.
- Reduced crop yield, stock numbers, native vegetation and native animals.

> "It's very depressing to see bare paddocks, skinny stock and dead animals"

- Increased bushfire risk.
- Loss of gardens and green space.
- Introduction of weeds as feed from other regions is brought in for stock.

Service and infrastructure impacts

- Loss of local services as businesses are forced to close.
- Mains water restrictions.
- Soil erosion causes soil to accumulate on roads, causing driving hazards and in some cases cutting properties off until roads can be cleared.
- Lack of water for personal use such as showers.

Beneficial impacts

While minimal in comparison to the negative social impacts of drought, participants identified that drought can occasionally cause positive social impacts:

- Increased community closeness as community initiatives proliferate to bring people together, sporting clubs become a more important lifeline than ever, and families and friends support becomes vital.
- Increased time for those who have less workload due to less economic activity have more time for family, recreation, volunteering and education (if funds and mental wellbeing allow).
- Increased awareness of drought and how to respond which improves forward planning and response in the next drought.

> "What doesn't kill you makes you stronger"

4.3 Climate projections and drought

Climate projections describe what the future climate could be like, sourced from multiple climate models, and based on numerous assumptions about the factors that influence climate and the trajectory of change in greenhouse gas emissions in the atmosphere. Each model uses different assumptions and algorithms to project how climate variables such as temperature, rainfall and evapotranspiration will respond in different emissions scenarios over different time frames. The projections presented in online tools and viewers each use a different combination of global climate models and so show slightly different results.

For this Plan we have used the projections described by the CSIRO and Bureau of Meteorology in Climate Change in Australia, and used to downscale data in the MyClimateView tool.

Climate change is projected to increase the amount of time spent in drought on the Eyre Peninsula. Annual rainfall is projected to decrease, and temperatures to increase. Climate Change in Australia provides the following climate projections for the region.

Table 4 Projections for the Southern and South-Western Flatlands East sub-cluster (including the Eyre Peninsula)

Weather event		Projection	Confidence
Rainfall	**Annual rainfall**	Decreasing annual rainfall	High
	Winter rainfall	Decreasing winter rainfall	High
	Spring rainfall	Decreasing spring rainfall	High
	Summer and autumn rainfall	Unclear, although downscaling results suggest a continuation of the observed autumn declines.	Low
Drought		Increasing time spent in drought	High
Extreme rainfall events		Increasing intensity of extreme rainfall events	High
Average, maximum and minimum temperatures		Substantial increase in mean, maximum and minimum temperatures	Very high
Hot days and heatwaves		More hot days and warm spells	Very high
Frost		Fewer frost risk days	High
Potential evapotranspiration		Increased potential evapotranspiration in all seasons	High
Bushfire		Harsher fire-weather climate	High

Climate Change in Australia notes that on an annual and decadal basis, natural variability in the climate system can act to either mask or enhance any long-term human induced trend, particularly in the next 20 years and for rainfall.

Climate projections for particular locations in the region can be sourced from http://myclimateview.com.au.

Rainfall and temperature projections from MyClimateView for five Eyre Peninsula towns at 2050 using RCP 8.5 (a high emissions scenario) are shown in the table below. Total annual rainfall is projected to decrease in all locations. In the southern areas, the decrease is driven largely by decreases in spring rainfall, whereas further north, larger decreases are projected in summer and autumn rainfall. Average temperatures and number of hot days annually are projected to increase in all locations.

Table 5 Selected climate projections for five Eyre Peninsula towns

	Ceduna		Cowell		Minnipa		Cummins		Port Lincoln	
	(1994 – 2023)	2050s ave	(1994 – 2023)	2050s ave	(1994 – 2023)	2050s ave	(1994 – 2023)	2050s ave	(1994 – 2023)	2050s ave
Total annual rainfall	268mm	241mm	259mm	232mm	311mm	283mm	424mm	381mm	481mm	452mm
Summer rainfall	47mm	35mm	56mm	40mm	51mm	45mm	58mm	46mm	57mm	46mm
Autumn rainfall	61mm	51mm	59mm	49mm	64mm	54mm	87mm	80mm	102mm	100mm
Winter rainfall	98mm	94mm	74mm	78mm	122mm	114mm	189mm	173mm	215mm	212mm
Spring rainfall	62mm	59mm	70mm	63mm	75mm	69mm	91mm	81mm	107mm	93mm
Average maximum temperature	24.0°C	25.3°C	23.9 °C	25.2 °C	24.6 °C	26.0 °C	22.0°C	23.2°C	21.2 °C	22.2 °C
Annual hot days (over 35°C)	30 days	38 days	28 days	37 days	38 days	51 days	13 days	18 days	6 days	8 days

The potential impacts of climate change on Australian agriculture are well documented and include reductions in crop yields, pasture growth, animal health, carrying capacity and soil condition as well as increased invasion of weeds, pests and diseases.[22] Of primary concern for farmers on the Eyre Peninsula is how a warming and drying climate could influence broadacre cropping yields and production of pasture for grazing. In the northern parts of the Eyre Peninsula greater areas of farming land may become marginal for cropping.[23]

The region has been proactively planning for climate change for many years through supporting research projects and industry and community work into climate change impacts and potential adaptation options.

Various agricultural practices that are considered leading edge will provide some measure of adaptation in the short term. However, long term adaptation may require more transformational responses.

5. Trends, challenges and opportunities

Weather is not the only factor that influences the success of farms, business, community and the environment on the Eyre Peninsula. A number of economic, social and environmental trends, challenges and opportunities have a direct or indirect influence on the resilience of the Eyre Peninsula to drought and other stressors. These have been summarised in the table below.[24,25,26,27,28]

Table 6 Drivers of change on the Eyre Peninsula

Trend, challenge or opportunity	Influence on the Eyre Peninsula
Improvements in farming practises	Eyre Peninsula farmers have always been on the forefront of innovative agricultural practise. Improvements in technology and machinery have increased crop yield enormously over the past few decades and will continue to do so.
Changing crop types and stocking rates	Recent changes in demand and agricultural practice have led to changes in crop types and stocking rates. This has led to reduced sheep numbers, particularly merinos, an increase in more frost and drought tolerant varieties and increased area planted to lentils.
Lack of local agricultural value-add opportunities	Due to a lack of local agricultural value-add opportunities on the Eyre Peninsula, and the prohibitive road freight distance to many domestic markets, farmers are forced to bulk export only, affecting their potential profits.
Market competition	Until recently, Viterra had a monopoly over the crop market. The introduction of T-Ports has created competition and significantly improved market conditions for Eyre Peninsula farmers.
Increased agricultural input costs and lack of local supply of inputs	Over the last four years, the cost of agricultural inputs including seed, chemicals and machinery has substantially increased. This has impacted the profitability of Eyre Peninsula farms. The distance of Eyre Peninsula farms from many providers of agricultural inputs results in increased transport costs, reduced choice, and a need to order supplies so far in advance that this cannot be informed by the year's conditions.
Market volatility	Sudden and unexpected widespread trade disruptions resulting from global pandemics, conflict, geopolitical tensions, disease, or similar events can have significant impacts on supply chains, demand, and commodity prices. The financial success of agricultural businesses is influenced by fluctuating market prices for agricultural goods. Other market changes such as bans on the export of live sheep also influence the profitability of the agricultural industry.
Consolidation of agricultural interests	Farms on the Eyre Peninsula have become bigger over the past few decades. As farms have been sold, neighbours or commercial entities have purchased and amalgamated them into larger properties, resulting in physically larger enterprises owned and run by fewer people.

Trend, challenge or opportunity	Influence on the Eyre Peninsula
Interest rates	Recent low interest rates have helped Eyre Peninsula farmers to service their debts. As interest rates rise, this has a major impact given high debt levels of many businesses in the sector. The higher interest rates of the 1990's are still recognised as a time that changed the course of the agricultural sector on the Eyre Peninsula as many farmers unable to service their loans were forced to sell their farms.
Growth in new markets	The Eyre Peninsula is well positioned to capitalise on recent growth in emerging markets. This includes lentils, wind and solar energy, hydrogen, mining for minerals critical for the net-zero transition, space technology, seaweed and local processing and manufacturing.
Decreasing population in small towns	It can be challenging for small regional towns to retain population numbers and compete with the economic, educational and social opportunities available in urban areas and regional centres. Conglomeration of farms and increasing mechanisation of work on farms has further exacerbated this. Younger generations are often seen leaving the region, resulting in ageing populations and changing social dynamics.
Tight regional labour markets	Regional areas including the Eyre Peninsula are experiencing greater difficulty in attracting and retaining labour across a number of industries.
Lack of services and infrastructure	A lack of services including childcare, education, medical services and housing present major challenges to the Eyre Peninsula community.
High reliance on volunteers	Volunteering rates are falling across the region, particularly in younger age groups. This has implications for the future viability of sporting and other clubs which play a very important role in keeping communities connected and vibrant.
Digitalisation	An increasingly digital world has opportunities for improved farming practises and business management, online work and study, telehealth and online shopping. With technology and automation come consequences for jobs and security.
Water security challenges	Decreasing groundwater levels on the Eyre Peninsula pose a major water security challenge for the region. Alternative water sources such as a desalination plant are necessary to construct as soon as possible to limit water restrictions and long-term negative impacts on local water resources.
Climate change and decarbonisation	Responding to climate change requires a shift in the agricultural sector to reduce carbon emissions and adapt to a new and changing climate. Mining, manufacturing, transport and other industries will also require transformational change.
Decline in biodiversity and ecosystem health	The abundance and diversity of biodiversity and ecosystems globally are in rapid decline. Many species have become extinct, and more are highly threatened. The continued effects of climate change, land clearing, pollution, invasive species and direct exploitation (eg wild fishing) will result in further biodiversity loss.

6. Drought resilience

For this Plan, drought resilience is defined as:

> *The ability of communities, economies and environments to withstand the impacts of drought and adapt and find new and potentially transformational ways of doing things, enabling functions and values to be sustained over the longer term.*

Resilience is more than just bouncing back. In some cases, disruption can be seen as an opportunity to move in a new direction, not just recover back to a previous state. Resilience is about proactively changing in order not to be changed.

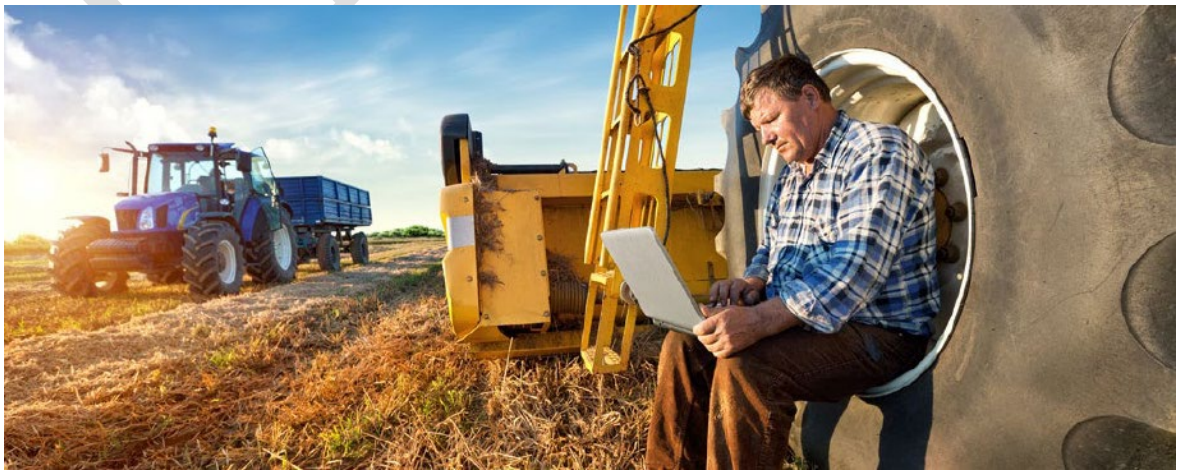
Building resilience will help the Eyre Peninsula to get through droughts with less negative impacts and recover from them sooner.

6.1 Why is drought resilience important?

In the past, droughts have had serious impacts on the Eyre Peninsula. They have major consequences for the ability to grow crops or feed livestock, jobs and income, mental health and wellbeing, the size of regional populations, and the health of the environment.

Resilience is about taking action to try to avoid or minimise these negative impacts before they happen rather than waiting until they do occur to act, or just focusing on recovery. Building resilience can create economic, social, and environmental development opportunities. By having good business, financial and technical skills and having a plan developed before drought, the decision-making load and much of the stress of primary producers can be reduced when drought hits. This can help them to weather the drought until rains break.

It is important to recognise that drought resilience is also important for the wider community, economy and environment beyond primary producers. Other people, businesses and environments are directly impacted by drought, and the impacts of drought on farms have flow on effects to the wider region.



6.2 Characteristics of drought resilient individuals, communities, and regions

We heard again and again that Eyre Peninsula farmers are inherently resilient. Eyre Peninsula farmers and other community members are continually faced with a suite of challenges which have enhanced their resilience and problem-solving skills through generations.

Particular characteristics of resilience are summarised below in Table 7. These have been identified though the engagement and literature.[29,30,31,32,33]

Table 7 Characteristics of resilient individuals, communities and regions

Theme	Key characteristics
Social characteristics	• Strong social connections with family, friends, and the wider community facilitated through formal and informal networks. • Past experience and learnings of drought or other adversity. • Good stress management and decision making including when under high pressure. • Good mental mindset, maintaining optimism where possible. • Having involved and diverse community groups, sporting clubs and other community spaces that support community connection and cohesion.
Economic characteristics	• Good business and financial management skills, including through formal education. • Having a financial buffer. • Being prepared for drought. • Good decision making in responding to drought, noting that luck can play a role given no one can control the weather. • Household and regional income diversification. • Implementing good farming practices to maximise profitability in the long term. • Having a good relationship with bank managers or other financial institutions. • Being flexible and adaptable. "Nimble farmers can make better practical choices during drought"
Environmental characteristics	• Implementing farming techniques that maintain and enhance soil health and minimise soil erosion. • Planting more drought-tolerant species and varieties. • Integrated, widespread, preventative pest plant and animal control. • Changing farming practises early when drought begins.
Infrastructure and service characteristics	• Water infrastructure that provides water security and affordability.

Theme	Key characteristics
	• Local services including childcare, healthcare, shops, housing and banks that are not just located in regional centres. • Regular and ongoing social and wellbeing services. • Local accurate weather stations and short- and long-term weather forecasts. • Local, reliable and affordable supply of farming inputs. • Competition between local services which improve market conditions. • Good port access and facilities.
Innovation, research and development characteristics	• Continually learning and being receptive to new technologies, techniques, varieties, chemicals etc. • Continual research and development into more effective farming practises, varieties etc. with good extension and uptake of this information in the broader agricultural community. • Locally specific research and development. • Good access to relevant information and knowledge.

6.3 A new approach to resilience through the National Drought Agreement

In the past, the Government of South Australia made declarations of drought with associated Exceptional Circumstances support and focused the majority of their drought programs on the 'during' and 'after' phases of drought.

This approach changed with the introduction of the first National Drought Agreement in 2018 and its recent revision (2024-2029).[34]

All Australian, state and territory governments have agreed to and signed the Agreement which explains how they are working together to help Australian agriculture better withstand drought.

A key feature of the agreement is a greater focus on enhancing drought resilience before drought, to enable farms, people, businesses and the environment to minimise the impact of drought rather than waiting until drought hits to act.

Another is the elimination of drought and Exceptional Circumstances declarations. Previous drought declarations necessitated the drawing of lines on maps to identify regions in drought. Community and stakeholders recognised that this approach was challenging and often flawed with some farmers in need being ineligible to access support. The new approach recognises that support needs are highly variable, and eligibility should be based on need, not activated by drought declarations.[35]

The development of this Plan is consistent with the Agreement's objectives to prioritise objectives and outcomes that enhance long-term preparedness, sustainability, resilience and risk management for farming businesses and farming communities in Australia.

During the engagement undertaken to inform the development of this plan, it was evident that there remains a belief that drought declarations may still be made in South Australia. Increasing awareness and understand of the National Drought Agreement has been identified as an opportunity for action in this Plan.

7. The Drought Resilience Plan

This Plan sets out a vision, goals, strategies and actions to help the Eyre Peninsula to enhance its resilience to drought.

7.1 Vision

The Eyre Peninsula's vision is for:

Eyre Peninsula farms, businesses and communities that are strong, sustainable, vibrant and drought resilient.

7.2 Delivery principles

The following principles will guide drought preparedness, response and recovery work through this Plan:

- Investment will be focused largely during the preparation phase, to help people, businesses and the environment to set themselves up to minimise the impacts of drought. This will help to enhance long-term preparedness and resilience in the region.

  "It is better to manage and minimise risk than to try to rebuild after a tough blow".

- Support will be available to everyone and not disadvantage those that respond early to emerging risks or issues.
- Timing of delivery of programs during drought is critical. Policy intervention will be mobilised quickly to ensure an appropriate response when it is most needed.
- Where existing, successful initiatives exist, these will be supported, promoted and enhanced where required rather than delivering new initiatives.
- A bottom-up, community-driven approach will be used wherever appropriate, to understand what locals want and need and how to deliver programs in a way that suits them.

  "Listen to the people on the ground and then take action to what they say"

7.3 Goals, Strategies and Opportunities

The goals, strategies and opportunities to build drought resilience on the Eyre Peninsula are described in the following sections. The strategies seek to leverage existing strategic planning and avoid duplication of effort by referring to the implementation of other regional plans. Strategies are high level to provide flexibility to accommodate changing circumstances, new evidence and evolving knowledge while remaining accountable to the stated goals, vision and regional values.

The practical and implementable opportunities to build drought resilience have been developed with the region's community and stakeholders who have identified and supported them because they believe they will be effective.

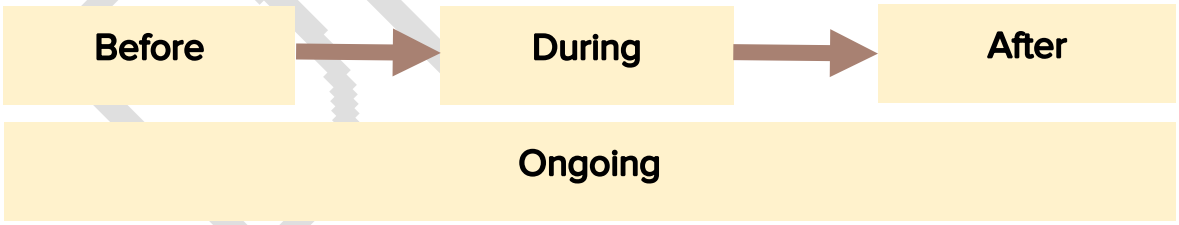
While targeted at the impacts of drought, this support provides co-benefits for broader resilience and adaptation.

The goals, strategies and opportunities are presented under the following themes:

- Farming innovation
- Community wellbeing
- Financial sustainability
- Landscapes and environments
- Governance and advocacy
- Regional infrastructure and services
- Regional economic development.

Timing

The timing for delivery of each opportunity has been categorised according to when it would fit within the drought cycle:



The Plan places a focus on actions to be undertaken before drought hits. By focusing effort and investment in the phase, Eyre Peninsula farmers, communities, businesses and environments will be better set up to minimise the impacts of drought, rather than bearing them when they come. This approach will help to support the long-term preparedness, sustainability and resilience of farm businesses and communities. Nonetheless, it is recognised that support will still be needed during and after drought, and this plan will help deliver this support particularly during extended, severe droughts.

Potential partners

A number of potential partners have been identified for each theme area. Individual responsibilities for action will be identified as funding becomes available. Members of the Eyre Peninsula Regional Drought Resilience Advisory Group will help to identify responsibilities and drive accountability.

Priority strategies

Priority strategies that have potential to have the greatest influence in building drought resilience will be identified with a **star icon**. These priorities are not yet marked – they will be identified by stakeholders and the community through engagement on the draft plan and included in the final version.

Individual action

Opportunities in the plan have been scoped as actions to be taken at an organisational level. However, many of these can also be progressed at an individual level. For example, while regional organisations may provide training and grants for household income diversification, farms and families would also be able to diversify their income themselves without external support. These sorts of actions are identified with a **person icon**.

New initiative

Many of the strategies relate to work that is already underway, and either needs to be extended, expanded, promoted or accelerated to have greater benefit. Other strategies present opportunities that are limited in their current application or are not at all part of current action on the Eyre Peninsula. These present new opportunities that could lead to significant or transformational change for the region and are flagged with a **lightbulb icon.**

7.4 Farming innovation

Eyre Peninsula farmers continually look to make sustainable improvements to their businesses. They are well known for how readily they adopt new technologies and make improvements based on research outcomes to ensure their farms are productive and profitable.

Ongoing research, development and extension is needed to continue to drive the advancement of farming systems on the Eyre Peninsula. There are many areas for further investigation to enable continued productive capacity, profitability and resilience in the face of a drying climate and changing market conditions. The importance of evidence-based, practical, locally relevant information is recognised.

Innovation needs to be farmer-centred, with farmers as an integral part of the planning and delivery of research, development and extension. Peer-to-peer learning and use of existing trusted communication channels will be prioritised.

Continuing to provide access to information and support to build capacity to adapt and respond to risks will allow farmers to improve their practises and pass on healthier and more sustainable farms for future generations.

Goal: **Profitable, productive and adaptive agriculture thriving in a changing climate**		
Potential partners AIR EP, Eyre Peninsula Landscape Board, PIRSA, SA Drought Hub, Primary Producers SA, Livestock SA, Grain Producers SA, farming systems groups, agricultural service providers, Meat and Livestock Australia, Wool Industries Australia, Australian Government Department of Agriculture, Fisheries and Forestry, councils, Regional Development Australia Eyre Peninsula, Eyre Peninsula Local Government Association		
Strategies	**Opportunities for action**	**Timing**
Support farmers to prepare holistic farm management plans that cover financial and land management and support drought risk management	Provide support including training, resources, funding for consultants and scenario planning workshops for farmers to prepare farm management plans that include business and financial management and land management, succession planning, and including triggers or thresholds to support decision making leading in to and during drought.	Before
Support farmers to implement farm and land management actions that build resilience	Provide capacity building and support for farmers to raise awareness, technical understanding and implementation of locally proven resilience building farm and land management approaches	Before
	Continue to increase landowner capacity to implement modern, integrated agricultural weed and pest management practices.	Ongoing

Goal: **Profitable, productive and adaptive agriculture thriving in a changing climate**		
Strategies	**Opportunities for action**	**Timing**
Support farmers to implement farm and land management actions that build resilience (cont.)	Extend the findings of agricultural research that demonstrates benefits to drought-resilient farming and support adoption.	Ongoing
	Educate and communicate with the community on the weather forecast tools available from the BOM so that better more informed decisions can be made	Before
	Support young and new farmers to thrive in the agricultural industry through targeted capacity building and the establishment of a “next generation” farming network support network.	Before
Drive adoption of on farm innovation through agricultural research, development and extension	Identify and communicate key agricultural research and development priorities across the region through targeted engagement with agricultural groups, farmers, agricultural suppliers and other key industry stakeholders.	Ongoing
	Continue and expand networks with other agricultural research centres overseas and around Australia to build knowledge of emerging research and development, seek opportunities to trial approaches on the Eyre Peninsula and share local research findings.	Ongoing
	Invest in priority agricultural research, development, extension, cost-benefit analysis and adoption of new farming systems and techniques, varieties, technologies such as virtual fencing, tools and products that increase profitability and climate resilience of primary production in the long-term.	Before
	Ensure EP farmers have the best available information and local demonstrations on emerging ag tech opportunities including automation, AI, monitoring technologies, data management and use in decision making, etc. to drive farm efficiency.	Ongoing
	Identify and implement opportunities for small scale farm trials and demonstrations including funding for farmers to trial new techniques, products and practices on their own farms to validate innovations and new and emerging research findings.	Before

Goal **Profitable, productive and adaptive agriculture thriving in a changing climate**		
Strategies	**Opportunities for action**	**Timing**
Drive adoption of on farm innovation through agricultural research, development and extension (cont.)	Regularly communicate research and development findings to farmers and their key influencers using a diversity of platforms, for example Stickybeak days, field days, workshops, podcasts, YouTube videos, case studies, newspaper articles, webinars, extension officers, FaB mentors, Rural Business Support, Ag Bureau groups, agronomists, demonstration farms etc. Minimise costs of information access.	Ongoing
	Support farmer reflective practices, drought learning documentation and peer experience sharing through online platforms, diaries, experience sharing forums.	Before
Support construction of farm-scale infrastructure that enhances drought resilience	Provide capacity building activities to support farmers to understand the potential benefits and application of installing infrastructure that can support drought resilience such as small farm scale water management infrastructure, on-farm or in-system feed storage, feedlots, weather stations and on-site energy generation and storage.	Before
	Investigate and promote funding for infrastructure that contributes to farm resilience, including to manage water, feed, stock, vegetation and soils.	Before
Investigate models for community cooperatives	Investigate models for community cooperatives and collaborative and shared farm infrastructure such as community owned and run grain storage facilities, shared transport, truck stops etc. that reduce costs and benefit communities.	Before
Enhance integration of biodiversity-positive land management on farms and in the wider landscape 	Demonstrate and educate land managers on measuring biodiversity values and how they might provide alternative income streams into the future.	Before
	Investigate and support the uptake of agricultural practises that increase biodiversity including regenerative agricultural practises, quantifying the value of biodiversity on-farm, revegetation programs	Before
Support uptake of carbon farming and other practises that support income diversification and the transition to net zero 	Identify and demonstrate opportunities for carbon sequestration into soils via contemporary farming practices and perennial vegetation.	Before
	Build carbon farming literacy through delivery of workshops, demonstration sites and accessible information.	Before
	Support farmers to measure their farm emissions profile and develop strategies to manage on-farm emissions.	Before

7.5 Financially sustainable enterprises

Farmers are no longer 'just farmers' – they are now businesspeople, managing millions of dollars of inputs and outputs each year.

Loss of income is one of the most immediate effects of drought on farmers. This then flows through to the wider economy, as farmers "tighten their belts" and reduce their spending at local shops and suppliers.

The following strategies and opportunities for action aim to upskill and support farmers and business owners to manage their businesses and finances in a way that enables them to maintain an income stream, minimise debt and staff layoffs, and manage their business as best as possible before, during and after drought. They also identify effective ways to support economic activity and employment during droughts for those in need, which has beneficial flow on effects for the wider community.

Goal: **Long-term financially viable businesses and management capabilities**		
Potential partners Regional Development Australia Eyre Peninsula, Eyre Peninsula Local Government Association, councils, AIR EP, PIRSA, SA Drought Hub, Eyre Peninsula Landscape Board		
Strategies	**Opportunities for action**	**Timing**
Enhance business financial and business management literacy and planning that support drought planning	Support and promote education and training initiatives to enhance farmer's financial and business management skills to support good business management, contingency planning and forward and succession planning.	Before
	Provide support including training, resources, funding for consultants and scenario planning workshops for farmers to prepare a Farm Drought Plan that supports decision making leading in to and during drought.	Before
	Scope opportunities to establish or enhance existing communities of practice and network approaches for farmers to continually learn, share and update their business, financial and technical skills with their peers.	Ongoing
	Promote existing mechanisms for farmers to save money in high income years including Farm Management Deposits (FMDs) to be accessed during droughts.	Before
	Provide a forum for the finance professionals (bankers, accountants, business advisers) and agricultural suppliers to interact with farm technical advisers (including machinery and input suppliers) to develop a more informed and shared understanding of farm finance decision making	Ongoing

Goal **Long-term financially viable businesses and management capabilities**		
Strategies	**Opportunities for action**	**Timing**
Support diversification of income at a farm scale	Support primary producers to explore and implement action to diversify on- and off-farm income, including through different crops, sheep, tourism, carbon sequestration, online jobs or businesses and town or transport jobs including through mentoring and support for business establishment.	Before
	Investigate and share emerging opportunities for biodiversity credits, carbon farming, emissions reduction and other approaches that enable diversification and can deliver financial benefit from nature positive outcomes	Before
	Scope opportunities to support primary producers to gain additional education and skills to diversify their income, for example through provision of training or educational grants.	Before
Provide funding for local infrastructure programs to keep locals employed and stimulate local economic activity during drought	Scope opportunities in advance for infrastructure programs that can be delivered during drought, to ensure funding can be spent quickly and effectively once drought hits. Prioritise projects that enhance township amenity and provide continuing value to the local community during and after drought.	Before
	During drought, implement these infrastructure programs to stimulate local economic activity, provide jobs and income to local workers who may be out of work and source local materials from local businesses.	During
Support aspiring farmers to enter the agricultural industry	Explore opportunities to influence the loan programs (eg Agristarter) to increase ease of accessibility for aspiring farmers.	Before
Provide direct financial support for those in need	Coordinate fodder donations in a way that is equitable, minimises risk of weed transfer, and provides an opportunity for farmers to get together and support each other.	During
	Advocate for ongoing financial support for primary producers through the RIC (Regional Investment Corporation) or other schemes particularly to support farmers in subsequent years of extended droughts. Financial support should support forward planning and good decision making and does not disadvantage those in need for example those working a second job to provide for daily needs.	Before

7.6 Community wellbeing

Drought takes a major toll on mental health and wellbeing. Farmers, their families and the wider community need to be supported to maintain hope, connectedness and positivity through these trying times. Those who have strong connections with their friends, family and community, positive aspects of their life that they can focus on (such as sport, events or gatherings), and access to support when they need it are better able minimise the mental effects of drought.

It is important to provide a range of initiatives that meet the needs of diverse communities. Not all people are able or willing to recognise when their mental health is in decline and not everyone reaches out when they need help. Reaching these people is particularly critical.

There are a large number of existing successful regional initiatives in this space which will be supported and promoted through this plan.

Goal: **Strong individuals and healthy communities working together to benefit the region**		
Potential partners Councils, SA Health, Local Health Networks, PIRSA including PIRSA Family and Business (FaB) mentors, Eyre Peninsula Local Government Association, rural councillors, Centrelink, Regional Development Association Eyre Peninsula, Air EP, Eyre Peninsula Landscape Board, SA Drought Hub, Rural Aid, Not for Profit organisations, external/out of region community organisations		
Strategies	**Opportunities for action**	**Timing**
Maintain and strengthen community health and wellbeing	Coordinate and promote delivery of existing and new mechanisms for mental health and wellbeing counselling, mental health first aid training, mentoring, events (such as inspirational speakers or workshops), and other support services for Eyre Peninsula farmers, farming families and wider communities.	Ongoing
	Provide formal and informal opportunities for people with experience of drought to share what helped them through it so they are aware of what might happen, and acknowledge that farmers are not alone in drought.	Before
Facilitate community connection through events and activities	Work with community groups to prepare and deliver a program of free or low-cost initiatives that bring the community together, tailored to community needs and different audiences, for example community events, workshops, presentations, comedy shows, family fun days, sport and art initiatives.	Ongoing
Support local sport, interest and service clubs to continue to play their important role in sustaining community connections	Support local sporting and other interest or service clubs to run their day-to-day programs as well as one-off events that facilitate community connection and wellbeing.	Ongoing
	Support volunteer and volunteer organisation involvement, and review systems and processes to identify opportunities for improvement to reduce burden on volunteers and make it easy for volunteers to participate.	Ongoing

7.7 Landscapes and environments

Healthy ecosystems are more resilient to drought. By proactively managing, protecting and restoring our natural environment before drought, it will be better able to withstand drought and continue to provide benefits to our communities and economies.

There are emerging opportunities on the Eyre Peninsula for nature-based solutions that can offer cost-effective on farm protections while delivering co-benefits such as carbon capture and improved food and water security. Sustainable natural resource management, including of soil, water, and biodiversity, must be prioritised for building resilience to drought.

Goal: **Healthy soil, water and biodiversity that sustain productive landscapes**		
Potential partners Eyre Peninsula Landscape Board, Aboriginal groups, Landscape Groups, SA Drought Hub, Department for Environment and Water, National Parks and Wildlife Service, councils, conservation and environmental NGOs		
Strategies	**Opportunities for action**	**Timing**
Protect and enhance soil health	Implement the Landscape Board's Land Management Control Policy to support landholders to minimise risk of land degradation.	Ongoing
	Facilitate land management to improve soil health and vitality 	Ongoing
Effectively manage groundwater extraction	Effectively manage water allocation planning in Prescribed Wells Areas and water affecting activities to ensure the sustainable and equitable use of the prescribed water resources, while also making sure the needs of the environment are taken into account.	Ongoing
	Implement water resource efficiency programs or water restrictions to protect the condition of local groundwater aquifers.	Ongoing
Control pest plants and animals	Continue to support land managers to control priority pest plants and animals including through the implementation of the Pest Plant and Animal Control Policy, provision of bait for pest animals and culling of overabundant native animals. 	Ongoing

7.8 Governance and advocacy

This Plan will not reach its goals without effective governance. With clear leadership, coordination and communication the Plan can deliver on its goals in a way that is strategic, effective, minimises duplication, fills gaps and delivers what is most needed on the ground. Engagement with communities to understand what they need and how to deliver this in a way that suits them is central to this.

There are many opportunities to partner with others to enhance and broaden outcomes.

Goal: **Local, effective and coordinated action led and governed by local people that understand the region**		
Potential partners Regional Development Australia Eyre Peninsula, Eyre Peninsula Landscape Board, Eyre Peninsula LGA, AIR EP, PIRSA, SA Drought Hub, councils		
Strategies	**Opportunities for action**	**Timing**
Establish effective drought governance to support drought plan implementation 	Continue the Eyre Peninsula Drought Resilience Advisory Group (RDA EP, AIR EP, EP LB, SA Drought Hub, EP LGA, PIRSA) and explore opportunities to expand membership to include the health sector. Drive implementation of this plan including: – Advocate for and support long-term funding, review and improvement processes to ensure partner organisations and agencies learn from drought experiences. – Collaborate with other government agencies, not-for-profit organisations and private companies to identify opportunities for resource sharing, particularly where organisations have shared/common goals.	Before
	Provide a project officer to coordinate and support the delivery of drought resilience project funding applications and project delivery, and improve the coordination and funding of programs from different agencies to maximise efficiency and effectiveness and avoid duplication of effort	Before
	Establish mechanisms to engage with communities about drought plan implementation and available support before, during and after drought	Before

Goal: **Local, effective and coordinated action led and governed by local people that understand the region**		
Strategies	**Opportunities for action**	**Timing**
Promote regional primary production and good news stories	Work with other regions and organisations to improve public perception in metropolitan areas of farmers and the agriculture sector and the important role they play in South Australia's food security and economy, and increase appreciation for their hard work.	Ongoing
	Celebrate farming and community successes, promoting good practice that will or is strengthening drought resilience.	Ongoing
	Investigate opportunities to build Eyre Peninsula's agricultural brand with low emissions/environmentally friendly grain supporting products as a brand and protecting markets.	Ongoing
Work in partnership with Aboriginal communities to build drought resilience	Engage and collaborate with Aboriginal individuals and groups to understand their needs and what would assist in enhancing the drought resilience of their communities and the environment and support the delivery of identified projects.	Before
Support community leaders to continue to play their important role	Develop local leadership capacity by delivering and encouraging participation in leadership programs.	Before
Advocate for changes to financial mechanisms to build savings and manage tax	Advocate for Farm Management Deposits to be accessible during drought and available to all farms regardless of business structure.	Before
	Advocate for potential taxation system supports beyond FMDs to help farmers through drought periods.	Before

7.9 Regional infrastructure and services

Agricultural communities cannot thrive without adequate infrastructure and services to support them.

Infrastructure including desalination plants, weather stations and ports are critical to the future of the Eyre Peninsula. Water security at a regional scale is required to continue to enable our towns and farms to function. Local and regional scale water supply planning and investment is required to address supply constraints and future demand.

Appropriate access to services including education, childcare and healthcare is an ongoing challenge in small towns across the Eyre Peninsula. Improving these service offerings will make the Eyre Peninsula a more desirable place to live and allow residents to reach their full potential and lead happy, healthy and purposeful lives.

Goal: **Future-proofed water supplies, local services and infrastructure that attracts, retains and supports residents**		
Potential partners Regional Development Australia Eyre Peninsula, Eyre Peninsula Local Government Association, Department for Infrastructure and Transport, SA Water, councils, Department for Energy and Mining, SA Power Networks		
Strategies	**Opportunities for action**	**Timing**
Provide regional mains water security for the Eyre Peninsula	Advocate for investment in infrastructure to deliver water security for Eyre Peninsula	Before
	Advocate for further investment for network upgrades and improvements to town water security to accommodate the region's predicted water demand.	Before
Optimise the use of fit for purpose water in communities	Advocate for wastewater reuse in towns to maintain irrigation of cool, green spaces.	Before
	Identify opportunities to install additional water infrastructure to provide water for firefighting.	Before
Improve regional weather data collection and forecasting	Develop a business case to install a BOM compliant Mesonet weather station network across the EP to improve localised forecasting including inversions, frost and severe weather events.	Before
	Develop a business case to install a doppler radar system that covers the lower, central and eastern EP to allow for more informed on-farm decision making and reduce risk.	Before

Goal: **Future-proofed water supplies, local services and infrastructure that attracts, retains and supports residents**		
Strategies	**Opportunities for action**	**Timing**
Improve the services and infrastructure that support and maintain communities	Invest in the places where community gather such as sporting clubs and other community spaces, so they provide places for activity and connection.	Before
	Work with the education sector to enhance local education and training opportunities to keep young people in the region, working in the agricultural sector and provide them with better school subject options, enhanced local teacher attraction and retention, and better access to technology to access online education.	Before
	Advocate for improved internet connection across the region to allow for improved communication and enable use of on-line tools and information services that enhance farm and other business management.	Before
	Lobby government for a consistent region wide television and radio coverage (SA / EP region based) so that all communities across the region are better connected and function as a united and cohesive local information and promotion service. This should include the re-introduction of local news service.	Before
	Implement the Eyre-Peninsula-Strategic-Plan-2023-2026 actions to facilitate investment in strategic transport infrastructure, particularly on critical grain and livestock transport routes, to create new avenues to export markets, reduce costs and facilitate opportunities for local processing and value adding ventures.	Before
	Implement the Eyre-Peninsula-Strategic-Plan-2023-2026 actions relating housing, healthcare and education that support the resilience of the community.	Before

7.10 Regional economic development

The Eyre Peninsula has strengths that make it well suited to capitalising on the benefits of new and emerging markets. These include renewable energy (wind, solar and hydrogen), mining, value-add agribusiness, tourism and space. A new and exciting economy based on decarbonisation provides significant prospects for the Eyre Peninsula as it moves into a more sustainable world.

Diversity enhances economic and social resilience and provides employment choice. Diversification also increases convenience and provides greater opportunities for businesses to capture local expenditure, allowing local communities to support local businesses.

Goal: **Sustainable regional development that contributes to drought resilience**		
Potential partners Regional Development Australia Eyre Peninsula, councils, Eyre Peninsula Local Government Association, community organisations, NGOs		
Strategies	**Opportunities for action**	**Timing**
Support diversification of the economy at a regional scale	Implement the Eyre-Peninsula-Strategic-Plan-2023-2026 actions to support the development of new and emerging high value industries (not reliant on rainfall) to diversify the regional economy and decrease community reliance on agricultural income.	Ongoing
	Scope and implement opportunities for local agricultural value-add that provides alternatives to the bulk production of a commodity where there is little market control, for example local mills, abattoirs, oil presses, feed pelletising manufacturing, protein powder manufacturing.	Before
Investigate and advocate for opportunities to influence farming input and output prices and availability	Explore the development of an ammonia production facility to produce a local supply of fertiliser to reduce reliance on global markets, provide security of supply, reduce travel costs and reduce emissions.	Before
	Scope opportunities to enhance diversification of suppliers of the agricultural industry to promote competition and security of supplies and services.	Ongoing
Maintain population levels in regional towns	Support marketing of the Eyre Peninsula as a regional “lifestyle destination”, to support the attraction of both new residents and tourists, highlighting the unique selling points of each diverse part of the Eyre Peninsula.	Ongoing
	Leverage the opportunity of remote working via technology enablement for knowledge workers to live and work in the region”	Ongoing
Support shopping locally	Work with community support organisations to develop and implement shop local schemes during periods of drought, with a focus on supporting local small businesses.	Before and during

8. Implementation, monitoring and evaluation

8.1 Implementation

This Plan has been prepared as a framework or prospectus to guide future effort and investment in regional drought resilience.

The opportunities identified in this Plan are unfunded and some may only be progressed with further investment. Funding opportunities may be through the Future Drought Fund, industry funding, or other funding streams.

It is the intention that the implementation of this Plan will be addressed by a number of different delivery partners. The Eyre Peninsula community will be able to address some, while others will require coordination and cooperation between government agencies, non-government organisations and the private sector. Responsibilities for each action will be assigned to relevant organisations as opportunities for implementation of actions arise. The Advisory Group organisations will assist in assigning these responsibilities and maintaining accountability for action.

Through the engagement to support the development of this Plan we have heard clearly that farmers and communities want to be involved in the decisions that affect them. Planning the delivery of all projects will include the community from the start, to get buy-in and support and more beneficial outcomes.

8.2 Governance

It is proposed that the Advisory Group established to develop this plan will continue to coordinate and support project funding applications and project delivery to avoid duplication of effort and maximise local and regional benefits. Additional membership may be investigated, particularly to support community health and wellbeing projects.

It is proposed the group meets regularly to maintain an ongoing shared understanding of emerging issues, report back on progress of actions and keep on top of funding applications to any available source.

8.3 Monitoring, evaluation and reporting

This Plan and its implementation will be monitored, evaluated and reported on according to the *Regional Monitoring, Evaluation and Learning Guide* prepared by the Department for Primary Industries and Regions for the South Australian Regional Drought Resilience Plans.

Monitoring and evaluation are essential parts of delivering any plan, project or program. Undertaking monitoring and evaluation will help the Advisory Group, stakeholders and the community understand if the vision and goals are being progressed and assist in refining the project approaches to optimise outcomes. It also ensures accountability and provides information to share with partners and stakeholders to demonstrate program value.

This monitoring and evaluation framework is based upon a program logic approach. Program logic illustrates cause and effect relationships to provide understanding of how program resources are used to produce outputs and deliver outcomes in the short to long term. The model also

acknowledges the interaction of assumptions and external factors with outputs and outcomes. The elements of the program logic model shown in Figure 7 below are defined below.

Outputs: measurement of the direct actions taken, for example the activities and events delivered, the services provided and the funds spent. Output measures include both activities and associated participation.

Assumptions: the expectations we have that the actions we take and the participants involved will lead to the outcomes or change we seek to achieve.

Outcomes: the desired results of direct actions on individuals, groups, communities, organisations and the environment in the short-medium and medium-long term. Outcomes in the medium-long term are often influenced more by external factors (actions undertaken by others or changes in environmental, social or governance factors).

External Factors: the uncontrollable factors in the wider environment surrounding our programs that may interact with and influence outcomes.

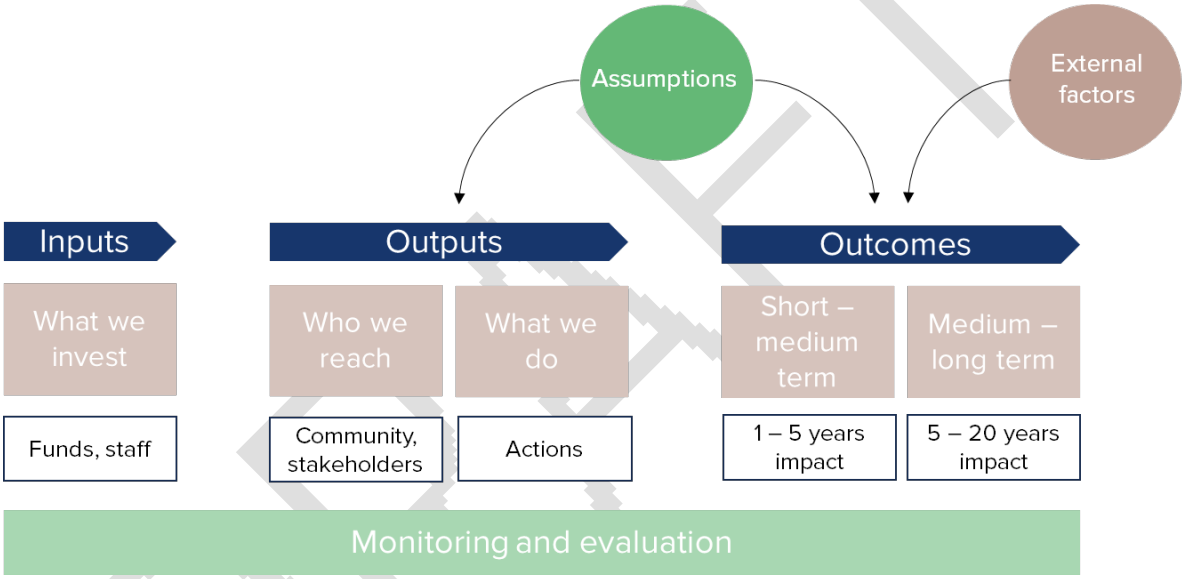


Figure 7 Program logic model for the delivery of the Plan

The program logic and monitoring indicators for the priority strategies of the Eyre Peninsula Regional Drought Resilience Plan are provided in Appendix A. This will be reviewed and revised as projects are funded and planning for delivery commences.

As projects are scoped for funding and then implemented, an evaluation process will be established that will consider:

- How effective was the project/program in achieving its intended outputs and outcomes?
- To what extend did the project/program contribute to the relevant goals, and what other things helped or hindered its implementation?

Once implementation commences, a biannual evaluation of the Eyre Peninsula Regional Drought Resilience Plan itself will be initiated that will consider:

- To what extent has the Plan been implemented and has impacted on regional stakeholders' capacity and resources to better plan, manage and recover from drought?
- What changes/support are/is needed to ensure that the Plan best provides an effective framework for action and stakeholders can effectively work together towards implementing those actions?

Glossary

Adaptation	Adjustment or modification in natural and/or human systems in response to actual or expected shocks and stresses to moderate harm, reduce vulnerability and/or exploit beneficial opportunities.
Climate projection	A scenario of future climate, generally resulting from running a global climate model with a specified greenhouse gas concentration scenario (or RCP). A projection differs from a prediction in that it is conditional on the representation of a particular global climate model and the uncertain assumptions of the model inputs (primarily the greenhouse gas concentration scenario, or RCP).[36]
Carbon farming	Carbon farming includes: • sequestering carbon in the landscape through regeneration and planting of native vegetation; farm and plantation forestry; and improving soil management to ensure that carbon inputs exceed outputs • reducing emissions, such as livestock methane emissions; fertiliser emissions and through manure management.[37]
Decarbonisation	The removal or reduction of carbon dioxide and other greenhouse gases output into the atmosphere.
Drought	A period of abnormally dry conditions that impacts negatively on water availability and agricultural production in a region and, consequently, impacts negatively on the economy and environment of the region and the health and wellbeing of its residents.
Drought resilience	The ability of communities, economies and environments to withstand the impacts of drought and adapt and find new and potentially transformational ways of doing things, enabling functions and values to be sustained over the longer term.
El Niño-Southern Oscillation	El Niño refers to the extensive warming of the central and eastern Pacific Ocean that leads to a major shift in weather patterns across the Pacific. In Australia (particularly eastern Australia), El Niño events are associated with an increased probability of drier conditions.[38]
Governance	Governance is the structures and processes by which individuals, groups and agencies in a society share power and make decisions. It can be formally institutionalised, or informal.
Indian Ocean Dipole	he Indian Ocean Dipole (IOD) is defined by the difference in sea surface temperatures between the eastern and western tropical Indian Ocean. A negative phase typically sees above average winter-spring rainfall in Australia, while a positive phase brings drier than average seasons.[39]
Transformational change	The process of radically changing or building a new system with different structure, functions, feedbacks and identity.
Trigger point	A pre-agreed situation or event, that when met, activates a management intervention. Trigger points are usually defined in the planning phase.

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