

GIPPSLAND DROUGHT RESILIENCE PLAN

A Framework
To Guide Future
Effort and Investment

Acknowledgement of Country

We acknowledge the Traditional Owners of the lands and waters on which we live and work, and pay our respects to their Elders past, present and emerging. We acknowledge that the Gippsland region is on traditional lands, including those lands of the Gunaikurnai, Bunurong, Wurundjeri and Taungurung Nations, as well as other Traditional Owner groups who are not formally recognised.

This Plan was jointly funded by the Victorian and Commonwealth Government under the Future Drought Fund.



Preface

Drought results in major financial, social and environmental impacts for primary producers, other businesses and the community.

The Gippsland region is committed to taking steps now to ensure good strategies are in place to prepare for and manage through future drought and dry seasonal conditions.

The \$5 billion Future Drought Fund invests in a wide range of drought resilience initiatives to help Australian farms and communities prepare for the impacts of drought. These are implemented through a suite of programs under five focus areas:

1. Harnessing innovation
2. Better risk management
3. Better climate information
4. More resilient communities
5. Better land management.

The Regional Drought Resilience Planning (RDRP) Program of the Future Drought Fund is supporting the development of regional drought resilience plans throughout Australia over 2021 to 2024.

This Gippsland Drought Resilience Plan (the Plan) aims to empower and enable communities to be better prepared for and able to manage future dry seasonal conditions and droughts. The Plan includes a collectively agreed framework for building economic, environmental and social resilience which can be used to guide future effort and investment.

The Plan builds on the regions historic and recent experiences of drought, existing drought-related strategies and programs, and other Future Drought Fund programs in Gippsland, most notably the:

- Gippsland node of the Victorian Drought Resilience Adoption and Innovation Hub
- Farm Business Resilience Program
- Sowing the Gap Project, under the Natural Resource Management Drought Resilience Landscapes Stream.

This Plan has been developed using a consistent methodology across Victoria:

- **Drought impact analysis** to understand the prevalence, severity and frequency of past, present and future drought impacts
- **Stakeholder engagement** to identify key insights and suggested priority areas for action to build drought resilience.

Agriculture Victoria partnered with the Gippsland Drought Resilience Plan Reference Group and many regional organisations and community groups to facilitate the development of this Plan, which was jointly funded by the Victorian and Commonwealth Government under the Future Drought Fund.

This Plan should be read in conjunction with the *Drought in the Gippsland Region* report.



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INTRODUCTION

Drought is a recurring feature in the Australian landscape. The Australian and Victorian Governments have partnered to support regional areas to ensure they are better prepared to manage and build resilience to future droughts, with an increasing focus on adaptation and change. The Commonwealth Drought Response, Resilience and Preparedness Program's vision is to have farm businesses and rural communities that are prepared for, and capable of managing, drought in pursuit of a prosperous and sustainable future.

Government, industry and community contributed to the development of this place-based, co-designed drought resilience plan. Stakeholders participating in these conversations are listed in **Appendix 1**.

This Gippsland Drought Resilience Plan for Gippsland (the Plan) seeks to facilitate a cohesive and coordinated approach to building community drought resilience. The Plan includes a collectively agreed framework (the Framework) for building:

- *economic resilience* for an innovative and profitable agricultural sector
- *environmental resilience* for sustainable and improved functioning of farming landscape
- *social resilience* for resourceful and adaptable communities.

The long-term objectives of the Plan are to:

- create stronger connectedness and greater social capital within Gippsland communities, contributing to wellbeing and security
- empower Gippsland communities to implement economically transformative activities that improve their resilience to drought
- support more Gippsland landholders to adopt holistic management approaches to improve the natural resource base for long term productivity and landscape health.

For the purpose of this document, *resilience* is used to describe the ability to respond positively to the known impacts of drought and maintain business functions. It is about being able to adapt, thrive and take advantage of opportunities when encountering change. Rather than 'persistent maintenance' of the current situation, or being stoic, resilience includes the ability to adapt and be decisive during uncertainty and change.

Resilience is critically important in rural and regional communities because it assists each person and group to build the mindset, social network and business skill set required to navigate the risks encountered in challenging seasons.

This Plan was developed over seven months, drawing on conversations with community members and existing strategic planning. During community conversations, local stakeholders identified that drought is experienced differently across the region and that there are many pathways to resilience depending on individual circumstances. They observed the seasonal connection between drought, fire and floods, and that a more integrated approach to risk mitigation for the sequential impacts of multiple events was required. The community strongly believed that self-reliance and improved preparedness is essential to building improved social, environmental, and economic resilience, and that landholders have a responsibility to be well prepared to manage their land and business activities. Nothing is more critical to mitigating the impacts of drought than understanding the risks and being well prepared.

Conversations with regional organisations and communities identified five themes critical to building resilience:

1. Resilient, connected, and empowered communities
2. Sustainable management and use of natural resources
3. Resilient local businesses and regional economies
4. Innovation, research, knowledge, and skills development
5. Key enablers essential to effective collaboration and collective action.

Under each Theme, the community identified Outcomes and Focus Areas to focus effort and guide investment critical to building drought resilience in Gippsland.

The Themes capture the lived experience, local knowledge and solutions identified by the Gippsland community through seven months of conversations (November 2021 to May 2022). Some of the Focus Areas can be addressed directly by the Gippsland community, while others will require broader cooperation from governments, agencies and the private sector beyond Gippsland.

We propose that these Themes, Outcomes and Focus Areas provide a robust Framework for building regional drought resilience based on our current knowledge of the most effective way to prepare for drought.

The Gippsland Drought Resilience Plan Reference Group (the Reference Group) oversaw the consultation process and endorsed the Framework as representing a coherent and balanced view of the feedback received from local stakeholders. The Reference Group noted that the Framework:

- Provides a ‘collectively agreed framework’ to focus effort and guide future investment
- Builds on and complements existing drought related strategies and plans developed by Local Government Authorities, not-for-profit organisations, industry, Government departments and community groups, as listed in **Appendix 2**
- Captures knowledge of our recent drought experience in a form that can be used to improve preparedness and response
- Is a useful resilience framework for Gippsland that may be relevant to other circumstances.
- Provides a sound basis for ongoing conversations with community
- Provides the basis to develop an implementation plan with specific actions and accountabilities.

The Reference Group acknowledge and thank the many organisations and individuals who contributed their time and expertise to shape this Plan. The Reference Group also acknowledges the need for further conversations with several groups including Traditional Owners and providers of community health and wellbeing services.

Ultimately, this document is a snapshot of the priorities of the Gippsland community at a point in time. Gippsland’s drought resilience story does not begin or end with this Plan. Rather, this Plan will advance as our understandings of drought, variable seasons, risk, and resilience improve. A detailed implementation plan with specific actions and accountabilities will be developed later.

A close-up photograph of a lush green wheat field. The wheat stalks are in the foreground, showing their developing heads. The background is a soft-focus expanse of more wheat under a clear blue sky. A white vertical line is on the left side of the page, and a blue horizontal bar is at the top.

VISION AND OUR GUIDING PRINCIPLES

Gippsland Vision

That Gippsland’s primary producers, other businesses and the community act now to be well prepared for, and be capable of managing, the known impacts of drought.

Guiding Principles

During community conversations, local stakeholders identified the following guiding principles that underpin building resilience:

- 1 Self-reliance and risk mitigation:**
Drought is not an exceptional circumstance, but a risk to be managed along with other business threats. Widespread community feedback was that primary producers and other small businesses will mitigate the impacts of drought by understanding risk and being well prepared.
- 2 Encourage preparedness:**
Investment should focus on encouraging preparedness in good years and support community connectedness and wellbeing in times of drought.
- 3 Collaboration and co-design:**
Drought preparedness programs should be co-designed with Local Government Authorities and other relevant stakeholders to ensure they effectively address local community priorities.
- 4 Improved decision making:**
Developing business skills and improved access to timely drought-related information is essential to support evidence-based decision-making for businesses and communities.
- 5 Integration:**
Foster collaboration between organisations to deliver timely, place-based, integrated services which simplify user access and reduce stress.
- 6 Leadership and community networks:**
Gippsland has a strong record of collaboration and community leadership. Drought programs should be designed and delivered in partnership with those established networks.

OUR REGION AND COMMUNITIES

Gippsland covers the entire south-east of Victoria with a geographic footprint of 41,600 square kilometers and a population of approximately 291,000 people. Gippsland is a diverse region comprising three areas with broadly distinct characteristics:

- The western region, recognised as one of Victoria's fastest growing communities, with strong maritime influences from Bass Strait, experiencing higher rainfall, a mild climate, and a warm, dry autumn (Baw Baw, Bass Coast and South Gippsland Local Government Areas).
- The central region (Latrobe and Wellington Local Government Areas) with a lower rainfall and a mild climate
- The eastern region experiencing a semi-maritime climate with more variable rainfall. (East Gippsland Local Government Area)

“In the last 20 years Gippsland has endured significant major emergencies including bushfire, storm, flood and drought making it one of the most major-emergency prone regions of Victoria. This has forged strong community strength and a history of resilience in Gippsland”.

Michael Owen Assistant Chief Fire Officer –
Regional Commander Gippsland Emergency
Management Region CFA South East Region.

The region's townships have their own distinct character and community with a deep sense of connection to the land. The smaller townships are highly dependent on agriculture (Frontier Economics, 2022, Kiem & Austin, 2012).

The major sectors in the region's economy are mining, construction, health care and social assistance, agriculture, forestry and fishing and electricity, gas, water and waste services (Gippsland Regional Economic Development Strategy, 2022). The visitor economy is also a significant contributor to the regional economy, along with secondary and post-secondary education which leverages TAFE Gippsland and Federation University.

Agriculture is one of the sectors most susceptible to, and impacted by, drought.

In 2019 KPMG worked with Food & Fibre Gippsland and industry stakeholders across the region to set an aspirational growth target for the regional food and fibre industry. Their research found that:

- Agriculture in Gippsland is based on dairying, broad acre grazing, horticulture, cropping, specialist intensive farming operations, forestry and fishing.
- Gippsland's reputation as a reliable supplier of clean, green safe food and fibre products contributes approximately \$7 billion of the \$16 billion Gross Regional Product (GRP) with an estimated 6,500 agriculture, fishing and forestry businesses contributing to over 250 communities across the region.
- The food and fibre supply chain includes another 2,500 businesses employing a further 15,400 employees (12 per cent of the region's workforce) from inputs to consumer.

More detailed economic, environmental and social perspectives are described in existing Gippsland regional strategies and plans (listed in **Appendix 2**).

Figure 1: The Gippsland region

Department of Jobs, Precincts and Regions, 2022,
Gippsland Regional Economic Development Strategy.



GIPPSLAND FARMS PRODUCE

28.6%
of Victoria's
dairy

23.4%
of Victoria's
beef

19.0%
of Victoria's
vegetables

POPULATION (2020)

GROSS REGIONAL PRODUCT (2020)

TOP EMPLOYING SECTORS (2020)

\$18
billion

**Health care and
social assistance**

Retail trade

Construction

**Agriculture,
forestry and fishing**

**Education and
training**

291,000

DROUGHT IN GIPPSLAND

Gippsland has experienced many significant dry periods over the last century, including:

- The Federation drought: 1895 to 1902
- The World War I drought 1914 to 1915 drought
- The World War II drought: 1937 to 1945
- 1965 to 1968
- 1982 to 1983
- The Millennium drought: 1997 to 2009
- The 2017 to 2020 drought.

An integrated assessment of the socio-economic and environmental impacts of past and future droughts is available in the supplementary report: *Drought in the Gippsland Region; Information to support the Gippsland Regional Drought Resilience Plan*. This assessment is based on an analytical framework that considers how drought affects farms and the wider community.

Central and East Gippsland recently experienced drought conditions that significantly altered agricultural production, which had flow on impacts on the community. The following section provides an overview of the conditions and the community's experience. Lessons from this period have greatly influenced the development of this Plan.



Gippsland's recent experience of drought (2017–20)

In the twelve-month period leading up to December 2017, below average rainfall was experienced in the central and eastern areas while southern and western areas experienced average rainfall (see **Figure 2**).

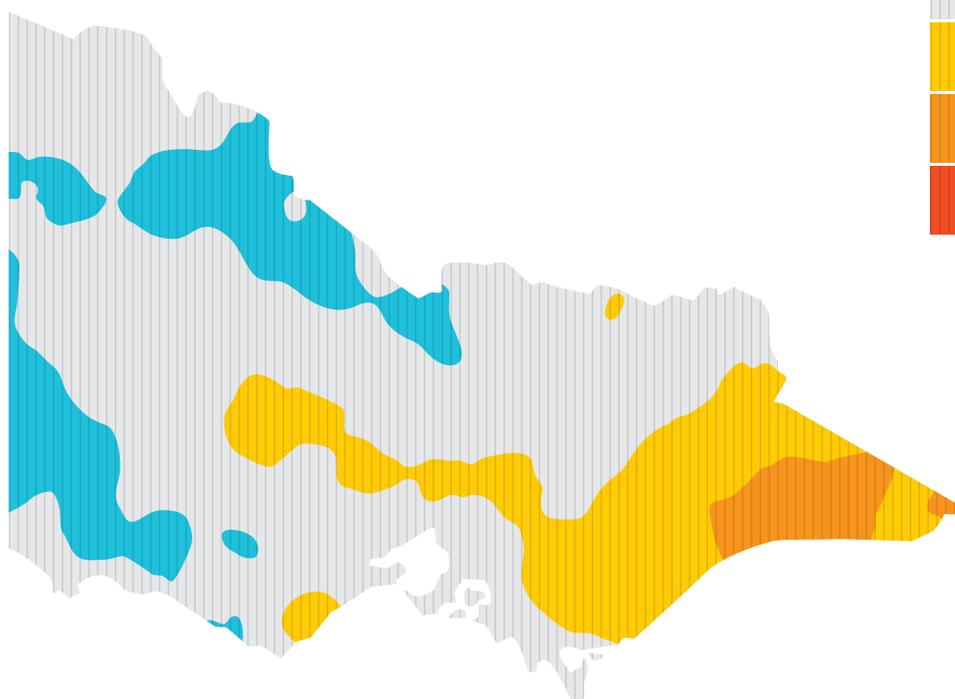
Despite 2017 being an exceptionally dry year, the Gippsland Water Outlook (2018), reported that most of Gippsland's towns were confident that their town water supplies remained secure for the coming summer season. Industrial water consumption declined over an eighteen-month period, due to the closure of Hazelwood Power

Station. During 2018 the Gippsland Integrated Water Management (IWM) Forum was established with the intention of facilitating better and more collaborative planning between water corporations, local Councils, the West Gippsland Catchment Management Authority, and other stakeholders.

Rainfall during 2018 was very much below average, especially in the east. **Figure 3** shows that rainfall across much of the region was around the first decile, meaning it was lower than in 90 per cent of all recorded years.

Figure 2: Victorian rainfall deciles
1 January 2017 to 31 December 2017

Australian Bureau of Meteorology, Recent and historical rainfall maps, Australian Bureau of Meteorology (bom.gov.au)



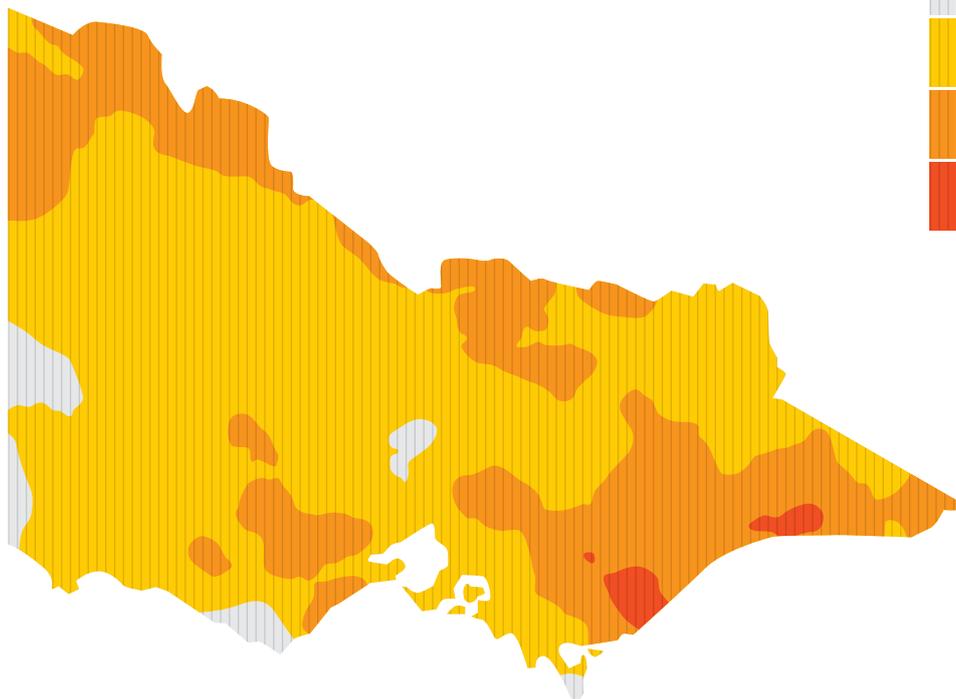
	Highest on record	
	Very much above average	10
	Above average	8–9
	Average	4–7
	Below average	2–3
	Very much below average	1
	Lowest on record	



Image credit: Agriculture Victoria, Drought in Central and East Gippsland 2018-20

**Figure 3: Victorian rainfall deciles
1 January 2018 to 31 December 2018**

Australian Bureau of Meteorology, Recent and historical rainfall maps, Australian Bureau of Meteorology (bom.gov.au)



	Highest on record	
	Very much above average	10
	Above average	8-9
	Average	4-7
	Below average	2-3
	Very much below average	1
	Lowest on record	

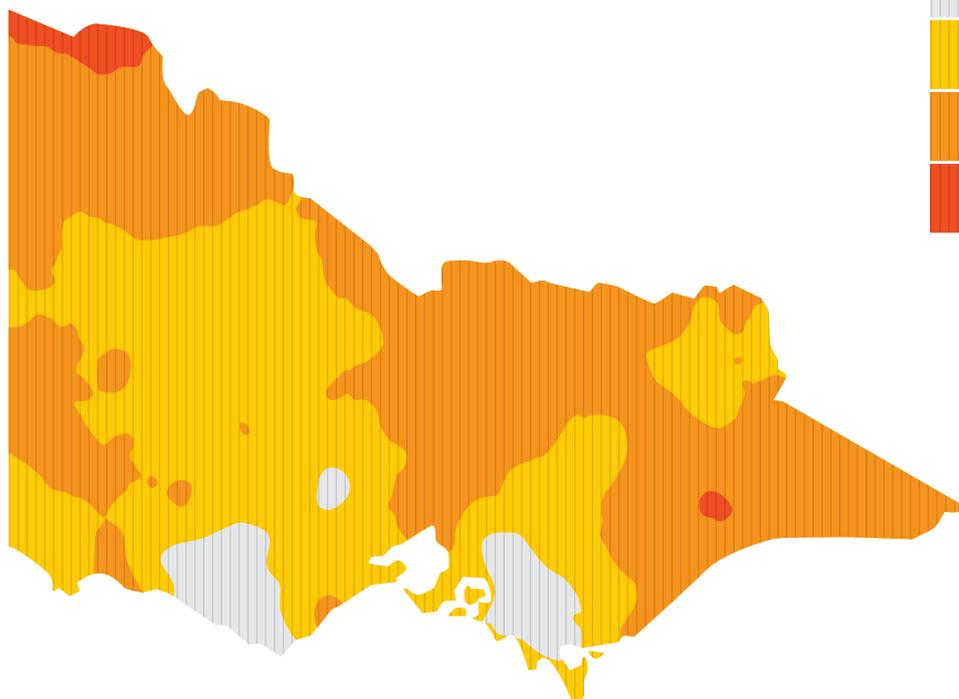
In 2019, there were highly variable conditions across the region (see **Figure 4**). Following a very dry Autumn and Winter, good Spring rainfall saw the western and central areas return to average conditions. By the end of the year parts of west had suffered numerous landslides and road closures due to heavy rain. In contrast, some areas in the central and eastern region continued to experience the lowest rainfall conditions on record.

Between October to December 2019 local newspapers in the east were reporting that:

- Gippsland rivers had experienced a significant drop in stream flows
- Local businesses were facing ‘dramatic impacts’, with less money circulating through the economy causing some stores and cafes to close
- Farmers were pleading for targeted and streamlined assistance to manage long-term drought conditions
- Invasive pests were causing widespread damage
- Communities were seeking easier access to mental health support
- Families were running out of domestic and stock water
- Many areas were experiencing a ‘green drought’¹
- Many sporting teams were confronted with hard dry surfaces reducing their capacity to play safely
- Community leaders were concerned about the psychological toll of watching crops fail for three consecutive years
- Local governments were supporting farmers with water cartage
- Water corporations were forecasting ongoing difficult seasonal conditions, putting significant pressure on water resources and water allocations.

Figure 4: Victorian rainfall deciles
1 January 2018 to 31 December 2019

Australian Bureau of Meteorology, Recent and historical rainfall maps, Australian Bureau of Meteorology (bom.gov.au)



	Highest on record	
	Very much above average	10
	Above average	8-9
	Average	4-7
	Below average	2-3
	Very much below average	1
	Lowest on record	

¹ A ‘green drought’ is where there is just enough rain to make the countryside look green, but not enough to produce adequate stock feed

Bushfires burned out of control across Gippsland from December 2019 until February 2020 impacting more than 1.1 million representing 56% of the East Gippsland shire. There were profound impacts on families, their local communities, ecosystems, businesses, the regional economy and infrastructure. Emergency services recognise the cyclical connection between drought, fire and floods, and the hazards these cause to public and private properties.

“Drought increases the risk of bushfires and their mitigation, as well as increasing the risk to remaining agriculture, economic assets and community livelihood due to drought. Drought also increases risks for emergency services, particularly Fire Services, due to availability of water and increased likelihood of fire”. Michael Owen Assistant Chief Fire Officer – Regional Commander Gippsland Emergency Management Region CFA South East Region.

In the twelve-month period to the end of December 2020, the drought was finally broken in most areas with rainfall ranging from 80-120 per cent of the average across the region (see **Figure 5**).

Any social, economic, or environmental vulnerabilities that already exist in communities (e.g., supply of services, low commodity prices, high unemployment, reduced access to medical services or isolation) are amplified when drought occurs. **Table 1** summaries the interconnected impact of drought, as described by the Gippsland community.

Figure 5: Victorian rainfall deciles
1 January 2020 to 31 December 2020

Australian Bureau of Meteorology, Recent and historical rainfall maps, Australian Bureau of Meteorology (bom.gov.au)



	Highest on record	
	Very much above average	10
	Above average	8-9
	Average	4-7
	Below average	2-3
	Very much below average	1
	Lowest on record	

Table 1: The interconnected impacts of drought in Gippsland



Social impacts

- Increased fatigue, anxiety and depression
- Reduced access to greenspace for recreation and exercise
- Increased load on committed individuals and community leaders, which can lead to fatigue and burn out
- Negative toll on family wellbeing due to the loss of on farm income or involuntary separation as farming families seek paid work off farm
- Changed demographics as people migrate away from drought-affected areas and industries
- Negative impact on some farmers' confidence and self-worth when they have to destock, gain off farm employment or consider themselves not to be a 'good farmer'
- Increased incidence of mental health issues and domestic violence
- Increased pressure on services, which can exacerbate existing challenges due to geographic or demographics

Environmental impacts

- Increased frequency and intensity of fires, which negatively impacts community health and wellbeing impacts, native habitat, cultural values and water and land health
- Loss of soil carbon, dropping of the water table and loss of shelter belt vegetation
- Increased soil run-off into rivers and estuaries, leading to other detrimental problems such as Blue Green algae outbreaks and fish deaths
- Increased predation on native species and increased grazing pressure onto farms from animals chasing food
- Increase in invasive species such as weeds, deer, horses and eastern grey kangaroos which caused further damage to agricultural landscapes and limited the ability of pasture to recover from drought
- Increased pressure on remaining wetlands and stream beds
- Increased soil erosion caused by reductions in ground cover
- Increase in tree diseases, for example a decrease in snowline impacts alpine species
- Increased animal welfare concerns for livestock and native species

Economics impacts

- Reduced on-farm production and income
- Decreased on-farm employment opportunities, which can increase local unemployment
- Increased costs for on-farm inputs
- Shortage of water for both domestic (home) use and stock water requiring purchase of water or carting water from Emergency Water Supply Points
- Increased financial hardship for the families, businesses, and local communities
- Decrease in expenditure in the local supply chain
- Loss of clients, industry knowledge and skills from the region which can limit the ability of communities to recover



The impact of future droughts in Gippsland

The influence of variable weather and climate will continue to have a substantial effect on farm sector earnings. It is not possible to predict or determine when the next Gippsland drought will occur and there are uncertainties around climate change forecasts and projections. Despite the absence of ‘perfect’ information, the prevalence, severity, and impact of future droughts in Gippsland can be informed by climate change modelling.

Victoria’s 2019 Climate Science Report² brings together the latest climate change science knowledge. The Gippsland Climate Projections are:

- Maximum and minimum daily temperatures will continue to increase over this century (very high confidence)
- By the 2030’s, increases in daily maximum temperature of 0.9 to 1.8 °C (compared to the 1990’s) are expected
- Over the long-term rainfall is expected to continue to decline in winter and spring (medium to high confidence) and autumn (low to medium confidence)
- Extreme rainfall events are expected to become more intense on average through the century (high confidence)
- By the 2050’s, the climate of Traralgon could be more like the current climate of Bairnsdale, and Bairnsdale more like Cowra, New South Wales.

The vulnerabilities and gaps in preparedness for drought differ depending on the resilience and socio-economic circumstances of each individual family, and social cohesion within the local community. Drought negatively impacts the health and wellbeing of all community members resulting in increased incidence of stress, burnout, mental illness, suicides, domestic violence, and relationship separations.

The impact of drought in rural and regional communities should be considered within the broader context of the numerous pressures confronting Gippsland families and small businesses.

The most vulnerable are those who have not prepared for drought or adapted to other challenges of a changing climate. Those who do not have the necessary business skills, are socially or geographically isolated, elderly or from lower socio-economic groups are particularly vulnerable to drought. Stakeholders observe that a sense of personal agency and control, together with an increased focus on individual and community ‘preparedness’ is critical.

² Victoria’s changing climate (climatechange.vic.gov.au)



RESILIENCE IN GIPPSLAND

Definitions of Resilience

Walker (2020) defines resilience as the capacity of a system to absorb a disturbance and reorganise so as to keep functioning in the same kind of way. Rather than just ‘bouncing back,’ resilience is all about changing and adapting to circumstances, rather than having them change you.

For the purpose of this document, *resilience* is used to describe the ability to respond positively to the known impacts of drought and maintain business functions. It is about being able to adapt, thrive and take advantage of opportunities when encountering change. Rather than ‘persistent maintenance’ of the current situation, or being stoic, resilience includes the ability to adapt and be decisive during uncertainty and change.

Resilience is particularly important in rural and regional communities because it assist individuals and groups to build the mindset, social network and business skill set required to navigate the risks encountered in challenging seasons.

Resilient communities demonstrate some or all of the following characteristics:

- Local leadership and initiative
- Governance that embraces change
- Connection through formal and informal networks.

Resilient communities:

- Work together in the pursuit of common goals
- Foster self-responsibility
- Are adaptable and learn lessons from change
- Can anticipate issues and effectively manage risk
- Consider different perspectives and options to solve complex problems.

Throughout the engagement process the term resilience elicited a broad range of responses from communities. In particular, stakeholders noted the compounding pressures of drought, fire, floods and Covid within a short time frame and the challenge to concurrently build resilience within Gippsland businesses, communities and individuals. For many, resilience in Gippsland, in the identity and community sense, is a commitment to stay and continue to be productive rural communities, doing whatever it takes to achieve that successfully.



Image credit: Wellington Shire Council



Community Resilience

The Victorian Community Resilience Framework for Emergency Management (2020) provides a coherent perspective on community resilience. Although Drought is not considered an emergency, it is closely aligned to the Guiding Principles of this document and offers a useful foundation on which to build a more resilient region. It is composed of seven resilience characteristics that leaders should strive to build and affirm in community life. These are:

1. Safe and well
2. Connected inclusive and empowered
3. Culturally rich and vibrant
4. Sustainable built and natural environment
5. Dynamic and diverse local economy
6. Reflective and aware
7. Democratic and engaged.

Building resilience includes a focus on the sustainability of community lifelines with the explicit objective of strengthening the liveability, viability, and wellbeing of both the people and the region.

Although there is no 'one-size fits all' solution, alignment with this community resilience perspective will support organisations to:

- Encourage all to better understand and participate in achieving a shared vision of safer more resilient communities
- Align governance, policies and programs to strengthen community resilience
- Improve connection and collaboration within and between organisations
- Improve the capacity of all organisations to connect and support communities to take action before, during and after events
- Plan and support resilience through connected networks to support wellbeing, liveability and sustainability
- Utilise planning systems to mitigate risk.



Case Studies of Resilience in Gippsland

“There is no doubt about it, the people that can produce homegrown feed in quantities that are large enough to be able to sustain their business in dry times, have been the businesses that have been able to succeed quite well through recent droughts.” — Trevor Caithness, Gippsland Agricultural Group.

Adoption of new practices remains a challenge for many with limited time, finances, skills, or willingness to change.

The following case studies provide examples of lived experience in the Gippsland community and are grouped according to the themes identified in the plan. They each highlight different aspects of building drought resilience including community leadership, health and wellbeing, sustainable land management, self-responsibility, inclusivity, and connectivity.

Storytelling has the power to impact and change lives. People experiencing fatigue, trauma, stress, or mental illness can often identify themselves in stories and find comfort in recognising that they are not alone if they reach out for support. Storytelling is a powerful tool to show how people and communities can grow in the face of the challenges brought on by drought. It allows us to break the experience down and make it real.



Resilient, connected, and empowered communities

Improved community resilience and better preparedness and coordination will reduce the impact of drought on community.

CASE STUDY 1

People need people

Farmers need other farmers. They speak the same language, understand the challenges and feel comfortable with one another.

Sallie Jones, co-founder of independent milk label Gippsland Jersey, is passionate about her community and committed to ensuring that farmers and farming families get the support they require. She created a calendar for farmers to honour her dad who died of suicide in 2016 due to mental health conditions. A strong man with a huge capacity for work and a heart for fighting injustice, he silently battled depression and psychosis for over three years.

Relationships, social support, and a sense of belonging have been found to be key suicide protective factors. Each month in the annual calendar, 'The Hand That Feeds You', focuses on a brave farmer sharing their mental health journey. The calendars are distributed to over 1000 Gippsland dairy farms annually.

The National Rural Health Alliance found that male farm owners and managers are dying from suicide at twice the rate of the national average for other males. Farming is recognised nationally as an industry with a high suicide risk. Social factors, isolation, a tumultuous climate, the daily grind of farm work, limited access to health services, increasing financial pressures and consolidation of the industry are all factors found to have had an impact on farmer's mental health.

The stories contained within the calendar show the resourcefulness and resilience of Gippsland's local farming families and how in tough times Australians come together as a community. People need people! Sallie believes many lessons were learnt from losing her dad, but none more significant than the kindness shown by others who cared enough to show up and be present in her family's time of need.

This story was based from an article in the 2022 Hand That Feeds You calendar. Image credit: Sallie Jones and Michelle Breden.



CASE STUDY 2

Healing Rural Minds

Leanne Jennings is a fifth-generation farmer, manager of the Bairnsdale Neighbourhood House and community leader who has an intimate understanding of the challenges confronting those who live and work in isolated communities. She talks proudly of the Bairnsdale Neighbourhood House's work, in delivering the Rural Minds mental health workshops to small East Gippsland communities.

Rural Minds is an evidence-based program which offers comprehensive resources and training to facilitators and community leaders. The workshops aim to destigmatise mental health and provide information about mental health, wellbeing, and suicide prevention in a relaxed and local setting.

Leanne describes how bringing people together to connect socially, building trusting supportive relationships, and talking about mental health plays an important role in retaining the social fabric of rural communities. Communities and individuals are better able to recover from natural disasters if the local community is strong, connected, and well-supported.

The Bairnsdale Neighbourhood House story demonstrates the central role of community organisations as champions of place-based community led support and the integral role they continue to play in healing rural minds in the remote communities of East Gippsland. Through Leanne's outstanding leadership, the Rural Minds program is building a strong and informed community.

This story was based on a case study from the VOCSS website. Contact Leanne Jennings at bairnsdalenh@ozemail.com.au.

CASE STUDY 3

Improving community connections

There is an adage that farmers are far more likely to call a vet for their livestock than they are to call a doctor for themselves. A pilot health program currently being run in East Gippsland is making great inroads in changing that perception.

East Gippsland bush nurse, Sue Carroll is passionate about her community and observes that a lot of farmers do not ask for assistance, continue working hard and neglect getting advice for their medical conditions. Bush nurses look after the social and emotional needs of their clients, offering a wide range of services from being first responders, organising aged care assessments and preventative care for the elderly when they are struggling in their homes.

The Farmer Health Check program takes the health clinic to the farmer's door. They aim to improve connections with remote farmers and promote the benefits of preventative health assessments such as skin, blood pressure, cervical screening, and wellbeing checks.

Mental health support is one of the most important components of the Bush Nursing program delivery. As part of the Farmer Health Check, nurses complete a K10 mental health assessment and if required refer clients on to a counsellor



or psychologist. Farmers can also access 'The farmerHAT' health self-assessment tool, which can be completed online to check and keep a record of how they are travelling.

The Bush Nursing program offers important preventative care for residents living in remote communities, improves social connections and achieves positive lifesaving outcomes.

This story was based on a podcast from the Agriculture Victoria Talk podcast series. Visit Smarter, Safer Farms for more information about the Bush Nursing in Gippsland pilot project. Image credit: Sue Carroll, Swifts Creek Bush Nursing Centre Inc.



Sustainable management and use of natural resources

Improved preparation and building resilience before drought is essential with a focus on demonstrating and implementing innovative climate-resilient farming systems.



CASE STUDY 4

How Communities of Practice can improve productivity, profitability and sustainability

The Gippsland Agricultural Group (GAgG) is driven by farmers who are passionate about agriculture and seeks solutions to local issues with a focus on livestock, grains, fodder, pastures, and soil health.

GAgG carries out research trials and demonstrations on fodder and grains crops, to investigate innovation in agriculture and the feasibility of implementation in arable dry land country. If proven viable, the knowledge gained from these trials and demonstrations are moved to satellite farms for large paddock scale research. The information gained is willingly shared through the farming community, with many applying the skills and knowledge on their own farms.

At no time is disadvantage more distinct or isolating than during crises such as droughts. GAgG is committed to establishing and maintaining an effective community group that supports the needs of its members. The group facilitates whole of community learning, whilst ensuring all members can participate by proactively working towards a common goal, promoting interaction amongst a network of peers, electing leaders that stand by the group's values, supporting freedom of expression and effective communication, setting clear policies and obligations, and modelling robust decision-making processes.

This passionate group of farmers demonstrate it is possible to unlock the potential productive value of our soils and farming systems, creating a robust viable agricultural industry, and mitigating risk by setting up 'Communities of Practice' to improve productivity, profitability, and sustainability.

This story was written by Jen Smith for the Gippsland Agricultural Group. Image credit: Lyric Anderson, GAgG, Giffard West on-farm soil sampling during field day

CASE STUDY 5

Strategies for dry land farming

For over 40 years, Joan and Rob Liley have farmed at Mount Lavinia adjoining the beautiful Cape Liptrap Coastal Park in South Gippsland under principles of environmental sustainability and animal welfare. They currently fatten about 700 prime bullocks a year on about 450 hectares. This is regular rainfall, sandy loam, coastal heathland country with perennial ryegrass and clover pastures.

Twenty per cent of the farm is fenced out to creeks, drainage lines, and tree lanes that provide environmental and production benefits. Joan and Rob monitor their soils, continually replace elements, match pastures and stocking rates, and prioritise cattle wellbeing as they work towards net zero carbon emissions whilst maximising production. They highlight the importance of keeping high quality water. Rather than calling on local streams or using groundwater, their

properties are wholly dependent upon dams big enough to conservatively sustain animal production in extreme dry seasons.

These decisions are underpinned by flexible financial budgeting that considers advice on the options available for each season. Joan and Rob actively manage risk, are decisive and make calls early. For example, in dry years Joan and Rob advise that fertiliser application and harvesting should be completed earlier and by increasing the fertiliser rates and that stock should be closely monitored, with the best steers given priority paddocks to ensure each animal can reach its maximum weight.

Joan and Rob believe that by keeping themselves informed and by being brave and decisive by 'calling it early', it is possible to mitigate business risks in dry years without compromising on their conservation efforts.

This story was based on a podcast from the Agriculture Victoria Talk podcast series, Strategies for Dry Weather Farming in Gippsland.

CASE STUDY 6

Sowing the Gap

The 'Sowing the Gap' project aims to build resilience in farming operations, and better prepare East Gippsland farmers with the knowledge, understanding and experience to fill seasonal feed gaps. The project is managed by the East Gippsland Catchment Management Authority, coordinated by GAgG and driven by farmers.

The extensive use of supplementary feed to fill the seasonal feed gap in pasture-based farming systems significantly limits profitability and creates additional workload. During the last drought, many farmers relied on purchasing supplementary feed to maintain breeding herds. For many this was a stressful and unprofitable undertaking and shed light on transport and distribution issues.

This project explores the operational procedures and economics of growing fodder to fill feed gaps, producing fodder reserves, and building the type of resilience into grazing systems that are required to navigate a drought.

The project is based at the Gippsland Agricultural Group's Bengworden research farm, has six demonstration sites on commercial grazing farms.



It draws on existing local networks including Agricultural Victoria's 'Better Beef' network, the Top Soils network and Landcare. The project has seen the development of five case studies detailing approaches that worked well in the recent drought with documentation of the project findings to inform future practices.

The Sowing the Gap project has provided peer to peer learning, on-ground demonstration of results and sound technical advice, assisting East Gippsland farmers to proactively fill seasonal feed gaps critical to building drought resilience.

This story was written by Jen Smith for the Gippsland Agricultural Group. Image credit: Lyric Anderson, GAgA – Sowing the Gap pasture trial.

CASE STUDY 7

Sustainable pastures

Melissa and Justin Ainsworth bought their 140-hectare grazing property, 'Merriman Park', near Stradbroke in Gippsland in 2005 during the Millennium drought. The property has a range of soil types, including a grey sandy loam and black soil. For the past twenty years, they have worked diligently to turn the nutrient poor soils and run-down pastures into a sustainable grazing business.

Key steps to the Ainsworth's success include:

- **Lifting the soil nutrient levels:** they switched from traditional fertilisers to chicken manure after observing successful local dairy systems. This has provided improvements in the soil health and biology which is crucial for plant health.
- **Managing pastures in new ways:** they introduced 'Savvy cocksfoot', a resilient,

high yielding pasture that is suited to lighter soils, disease resistant, bred to tolerate hard grazing and extremely palatable, in conjunction with rotational grazing, has been critical for successful pasture establishment providing better coverage with less weeds.

- **Connecting with local groups:** they became involved with their local Landcare group and strategically established shelterbelts for biodiversity while providing shade and shelter for their stock. They have planted over 60,000 trees and have come to believe that caring for the environment goes hand in hand with productive farming.

With nearly three years of home-grown feed in storage for their Angus breeding enterprise, the Ainsworth's have built greater drought resilience through improving soil health, nurturing resilient high yielding pastures, and creating improved shelter belts to protect their stock.

CASE STUDY 8

Improving soil conditions and boosting farm profitability

Healthy soils are the foundation of a healthy, productive, and profitable farming enterprise. The Top Soils project focuses on developing local solutions for improving soil conditions and boosting farm profitability through farmer-driven focus groups.

Soils with low fertility limit fodder growth, and farm profitability. The need for the project was determined through Australian Bureau of Statistics data that showed that sustainable land management practices were not being widely adopted in the region.

The highly successful Top Soils 1 was developed in 2013 as a 5-year project with the objectives of improving and protecting the productive potential of agricultural land by improving soil health and the persistence and quality of ground cover. Top Soils 2 (2018 to 2023) continues with support from the East Gippsland Catchment Management Authority and funding from the Australian Government's National Landcare Program.

The first few years saw partner agencies gather data to benchmark the current soil fertility and farming practices. Top Soils 2 has enabled some of these sites to be retested to determine the change over ten years. Following the collation of soil

and plant data, five farmer-driven focus groups were established in separate geographical areas. Several research and demonstration sites have investigated the effects of nutrients and rotational grazing on weed loads in improved pasture systems and soil requirements, including micro and macro nutrients.

By supporting change towards best practice in soil health the Top Soils project has provided peer to peer learning, on farm demonstrations and technical advice, helping farmers to better understand and manage their land by looking for symptoms of unhealthy soils, providing a forum for discussion and practical local solutions.

This story was written by Nat Jenkins for Southern Farming Systems. Image credit: Natalie Jenkins, Southern Farming Systems and Top Soils Partners Far East Victoria Landcare, East Gippsland Landcare Network, Snowy River Interstate Landcare and Agriculture Victoria.





Resilient local businesses and regional economies

Economic resilience can be enhanced by businesses accessing and utilising professional advice to build capability, strengthen business planning and improve decision making.



CASE STUDY 9

Holistic farm business planning

John Appleby and Francine Gilfedder, run two beef cattle farms in Wairewa in East Gippsland and have experienced a broad suite of seasonal conditions over many years. They have developed a diverse skillset from managing these conditions, backed with a growth mindset on how to build resilience and develop a sustainable farming landscape.

John outlines seven important pre-drought steps they use to guide their business decision making:

1. Develop a holistic farm business plan
2. Explore opportunities to reduce water loss
3. Develop and nurture soils to build productivity
4. Strategically plan and develop farm infrastructure
5. Build financial and fodder reserves
6. Do not over stock
7. Set up well maintained firefighting infrastructure.

In addition, John has maintained a focus on farm sustainability grounded in nurturing their soils and pastures. However, following several years of severe drought, the Black Summer bushfires caused significant loss of pasture and infrastructure. Fortunately, their beautiful home and all livestock were saved. John believes that there is nothing more critical to mitigating the impacts of drought than by understanding risk and being well prepared.

A carefully laid out farm infrastructure plan has provided a platform for farm sustainability. The farm features well laid out paddocks that have been revegetated to improve soil quality, trees planted as wildlife corridors and, a bore and troughs to protect the natural waterways while keeping stock out of creeks. The construction of large deep dams and rotational grazing have also provided additional benefits in sustainably maintaining pastures, increasing soil fertility, less wastage and controlling grazing periods.

Holistic farm business planning, decisive decision making, and sustainable farming practices, have assisted John and Francine in maximising their farm's potential and developing a sustainable farming landscape.

Image credit: John Appleby, Nowa Nowa.



Innovation, research, knowledge sharing and skills development

Innovation, research, knowledge, and skill development is essential to build drought resilience and adaption.



CASE STUDY 10

Upskilling farmers in innovation

Food and Fibre Gippsland is the Gippsland node of the Victorian Drought Resilience Adoption and Innovation Hub, which is part of the Future Drought Fund. The Hub brings a network of universities and five highly respected farming/industry groups to connect farmers with regional agricultural experts and new practices. Food and Fibre Gippsland is focused on creating innovative local solutions for local problems.

Food and Fibre Gippsland was formed in March 2019, via the amalgamation of Agribusiness Gippsland and the East Gippsland Food Cluster. The collaborative organisation's mission is to lead capacity building, innovation, and knowledge sharing for the greater good of the sector across the whole of Gippsland.

They currently have a number of activities underway including:

- **The future fodder project** to build better preparation and storage of fodder
- **Training for mental health professionals** to better support farmers in times of drought
- **Development of a regionally produced fertiliser** specifically formulated to work efficiently in drought conditions
- **Greener dams** to increase water storage
- **Improved Ag-Tech solutions** for irrigated vegetables.

By creating solutions for local problems Food and Fibre Gippsland are carrying out an important role in accelerating the adoption of innovative and adaptive farming systems.

This story was written by Ben Gebert for Food and Fibre Gippsland.



Key enablers essential to effective collaboration and collective action

Building drought resilience will be enabled by a better understanding of drought impacts, clarifying shared responsibilities and regional governance, leveraging existing local networks and partnerships and improving digital connectivity.

CASE STUDY 11

Advocating for local drought response, recovery and preparedness priorities

The 2019 'Looking Ahead' Drought Response proposal, was prepared by the East Gippsland and Wellington Shire Councils in May 2019, in the final stages of a severe multi year drought.

The proposal built on the Council's existing initiatives to support businesses impacted by drought, including 1-1 assistance, community meetings and support programs. The process created an opportunity to reflect on the success or gaps in existing support programs and advocate for shared priorities. The Looking Ahead document proposed a three-tier approach to support manage through, recover from, and build preparedness for drought:

- 1. Transition:** Programs for those who either chose to or had no choice other than to transition away from agriculture.
- 2. Recovery:** Programs to help manage the impacts on farm and reduce off-farm impacts for the community.
- 3. Adaption:** Programs to help the community explore better pathways for agriculture in a changed climate.

The 2019 'Looking Ahead' Drought Response proposal shows how Gippsland people pulled together through one of the worst droughts in our history, providing a strong legacy of how collaborative leadership can be harnessed to advocate for shared priorities and to build drought resilience.

This story was written by the Wellington and East Gippsland Shire Councils. Image credit: Wellington Shire Council.



THEMES, OUTCOMES AND FOCUS AREAS



Thematic Framework

The Themes, Outcomes and Focus Areas for action (the Framework) detailed below captures the lived experience and local knowledge of the Gippsland community and organisations through seven months of conversation and builds on other existing strategic plans and policy document.

Some of the Focus Areas can be addressed directly by the Gippsland community, while others will require broader cooperation from governments, agencies, statutory bodies, not-for-profit organisations, and the private sector.

A detailed implementation plan with specific actions and accountabilities will be developed later.





The five Themes are:



Resilient, connected and empowered communities

Improved community resilience and better preparedness and coordination will reduce the impact of drought on community.



Sustainable management and use of natural resources

Improved preparation and building resilience before drought is essential with a focus on demonstrating and implementing innovative climate-resilient farming systems.



Resilient local businesses and regional economies

Economic resilience can be enhanced by businesses accessing and utilising professional advice to build capability, strengthen business planning and improve decision making.



Innovation, research, knowledge sharing and skills development

Innovation, research, knowledge, and skill development is essential to build drought resilience and adaption.



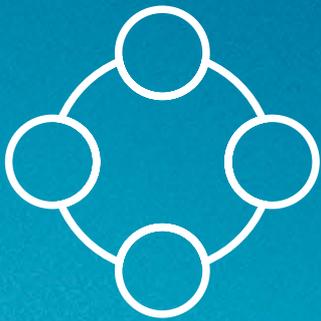
Key enablers essential to effective collaboration and collective action

Building drought resilience will be enabled by a better understanding of drought impacts, clarifying shared responsibilities and regional governance, leveraging existing local networks and partnerships and improving digital connectivity.

The following pages provide more detail for each of the 18 Outcomes including key insights and observations made by stakeholders and the proposed Focus Areas for action.

Theme 1

RESILIENT, CONNECTED AND EMPOWERED COMMUNITIES



Improved community resilience and better preparedness and coordination will reduce the impact of drought on community.

1.1 Foster and support our community leaders

Key insights and observations:

Leaders are essential to building and maintaining community resilience, local expertise, trusted advice and fostering open discussion. Community leadership is provided by a few committed individuals who bear a heavy leadership burden. We need to safeguard the wellbeing of these

community leaders from burnout. There is also a need to build the capacity for inclusive community led resilience by fostering, supporting, and empowering new community leaders (including an increased focus on women, youth and traditional owners). Gippsland has a strong legacy of collaborative leadership that can be harnessed to build drought resilience.

Focus Areas for action

- 1.1.1 Foster a culture of collaborative leadership across Gippsland agencies, industry, emerging leaders and community groups.
- 1.1.2 Build the capacity for community led drought resilience action.
- 1.1.3 Improve support for current community leaders.



Image credit: Lyric Anderson, GAGG

1.2 Improve community health and wellbeing by raising awareness of, and access to, community health services

Key insights and observations:

Drought negatively impacts the health and wellbeing of all community members resulting in increased incidence of stress, burnout, mental illness, suicides, domestic violence and relationship separations. Rural communities require better access to local health services and support including specialist support for women, children and men. Rural communities prefer to use existing local trusted providers. Current services are often delivered by multiple providers which creates confusion. A more integrated 'place based' approach to service delivery would improve awareness of, and access to, timely health services. Mental health services could also be offered more proactively once the early signs of drought are known. Better and earlier mental health management strategies will support stronger individuals, families and communities.

It will be important to continue to implement recommendations from The Royal Commission into Victoria's Mental Health System (2021). Recent progress has been made with the implementation of the Connect Well Partnership in East Gippsland and Wellington which focuses on working together to improve mental health and wellbeing outcomes for people in the region. We know that improving access to services and support for people works best if we work as a partnership.

Currently, with a nation-wide shortage of healthcare workers, and rural Australia experiencing an even keener shortage of access to services, achieving these outcomes will be extremely onerous. Improving community health and wellbeing outcomes will require considerable work to change current health behaviours for some cohorts, however, the wellbeing of rural communities will be enhanced by outreach programs that support social connection over the long term.

Focus Areas for action

- | | |
|-------|---|
| 1.2.1 | Improve awareness of services by providing one information portal and one point of contact for multiple health services. |
| 1.2.2 | Improve collaboration and coordination between health services to optimise service delivery and improve the user experience (e.g., consider 'one touch' case management, develop memorandum of understandings between providers or develop operating guidelines). |
| 1.2.3 | Strengthen existing trusted local health services and co-design any new programs with them so that services best meet local needs. |
| 1.2.4 | Provide training and awareness programs for health service practitioners to better understand and respond to the impacts of drought (e.g., Victorian Drought Hub initiative). |

1.3 Foster coordination and collaboration between not-for-profit organisations

Key insights and observations:

Charitable organisations play an important role in providing support to communities under stress. However, many landholders felt they were approached by multiple not-for-profit organisations in the last drought asking the same questions about their situation. Others noted that inequitable allocation of support created division within small communities. While the Victorian public donates generously and there are multiple dedicated not-for-profit providers, there

are few mechanisms to coordinate effort. Other well-meaning support agencies (not based in the region) arrived unannounced and did not work in partnership with Local Government Authorities or local communities, which resulted in confusion and angst. A new approach is required to better match support services with community need. Key elements are to optimise the use of funds and avoid replication through clearer processes, improved collaboration and coordination and more timely and relevant support services.

Focus Areas for action

- 1.3.1 Improve information sharing with and among not-for-profit organisations through regional and municipal forums.
- 1.3.2 Increase community awareness of available support and services.
- 1.3.3 Continue to develop improved processes to ensure equitable and effective distribution of support.

Theme 2

SUSTAINABLE MANAGEMENT AND USE OF NATURAL RESOURCES



Improved preparation and building resilience before drought is essential with a focus on demonstrating and implementing innovative climate-resilient farming systems.

2.1 Accelerate the adoption of innovative resilient and adaptive farming systems

Key insights and observations:

There are many pathways to resilience and individual circumstances influence what activities are important and useful for different businesses. Farmers need to proactively prepare for drought in a manner that best suits their local needs. Farmers can enhance their business continuity by preparing for drought with an absolute focus on implementing innovative, resilient and adaptive farm systems. There is increasing opportunity to benefit from farm systems which have environmental credentials, adopt regenerative agriculture principals, restore landscape function and utilise circular economy approaches to improvement management of waste and energy.

The recently renewed Regional Catchment Strategies, the Victorian Agriculture Strategy and most industry programs embed climate-adapted decision making into land and water management programs. Successful implementation of these improved farm systems requires sound technical advice, peer to peer learning and on-ground demonstration of results. The need to share experience and learnings of drought across the community is critical to improve preparedness and response.

Adoption of new practices remains a challenge for some businesses with limited time, finances, skills or willingness to change. Farmers need trusted mentors in business practices and innovative farming techniques. These are one on one personal relationships that can make a farming business a real success.

Focus Areas for action

- | | |
|-------|---|
| 2.1.1 | Continue to document best practice, lessons of experience and case studies to build a strong body of evidence that can inform future drought mitigation processes, strategies and programs (e.g., the Sowing the Gap project funded by the Future Drought Fund, East Gippsland Catchment Management Authority and East Gippsland Shire Council. |
| 2.1.2 | Support and empower farmers to accelerate the adoption of innovative and resilient farming practices that best suit their needs and circumstances. |
| 2.1.3 | Better harness our collective knowledge and skills by strengthening fit for purpose collaboration between farmer networks. |
| 2.1.4 | Facilitate 'collective' whole farm planning where neighbouring land managers come together to identify shared objectives and co-benefits. |

2.2 Diversify water storage and supply options on farm and in communities

Key insights and observations:

Having a secure water supply is essential to rural communities. Securing and distributing water can be complex, particularly during drought.

To improve the reliability of water supply and prevent water shortages primary producers should consider developing and implementing a water plan.



Focus Areas for action

- 2.2.1 Encourage primary producers to develop and implement a farm water management plan.
- 2.2.2 Water agencies and Local Government Authorities consider developing a governance framework to guide decision making and identify future water infrastructure investment opportunities (e.g., upgrade to Emergency Water Supply Points).
- 2.2.3 Organisations providing water management information to primary producers during drought collaborate more closely to coordinate technical advisory services and events; these organisations include Agriculture Victoria, Southern Rural Water, Catchment Management Authorities and the Department of Environment, Land, Water and Planning.
- 2.2.4 Advocate for the streamlining of planning processes to facilitate the construction of on-farm dams, bores or other infrastructure designed to mitigate seasonal and climate risk.

2.3 Improve management of natural resources on public and private land.

Key insights and observations:

Drought impacts all aspects of the natural environment. In Gippsland, drought can lead to lower soil carbon, soil erosion, impacts on groundwater level and surface water quality, habitat loss, increased predation on native species, increased tree diseases and higher snowline (which impacts alpine species). Some primary producers are significantly impacted by over abundant wildlife which further damages drought affected pastures and native vegetation and limits the ability of farmers to recover from drought. Gippsland aquaculture businesses are also significantly impacted by water shortages during drought. Future water availability for multiple users and uses is a key issue for Gippsland that

will be influenced by both rainfall variability and resolution of complex policy issues, such as Latrobe Valley mine rehabilitation.

Drought also directly impacts the frequency and intensity of resultant fires leading to high community health and wellbeing impacts, loss of habitat, cultural values and major impacts to neighbouring waters and lands. Most communities adjacent to forested land are deeply concerned by the compounding effects of drought and fuel management practice on future fires.

There is a strong demand for a more integrated regional approach to risk mitigation for drought and related climate events (e.g., fire, flood) and recognition of the cumulative impacts of those sequential events.

Focus Areas for action

2.3.1 Partner with Traditional Owners to implement Whole of Country Plans including natural resource management objectives.

2.3.2 The Department of Environmental, Land, Water and Planning and Parks Victoria will continue to implement current and emerging strategies to protect Victorian parks and forests from the worst impacts of drought.

2.3.3 Relevant agencies will implement the Gippsland Climate Change adaptation strategies including actions specifically relevant to agriculture.

2.3.4 Recognise and support the role Landcare networks have in building drought resilience at farm and landscape level.

2.3.5 Mitigate fire risk to the community by proactively reducing forest fuel loads with preventative burning in a timely manner.

Theme 3

RESILIENT LOCAL BUSINESSES AND REGIONAL ECONOMIES



Economic resilience can be enhanced by businesses accessing and utilising professional advice to build capability, strengthen business planning and improve decision making.

3.1 Improve decision making enhanced by holistic business planning and business skill development

Key insights and observations:

Small business is a high-risk activity. Many small businesses spend most of the time focusing on the production aspects of their operations but limited time on business management planning and risk mitigation. Drought is not an exceptional circumstance, but a risk that needs to be managed along with other potential threats to their business (whether the result of shifting consumer demands, variable climate events, a pandemic or the impact of an accident or illness).

The development and implementation of sound business plans is essential to manage profitability, mitigate risks, ensure wellbeing and smooth transition or succession. Professional holistic advice is essential, but many note it is difficult to find advisors that can provide the range of advice required and the Rural Financial Counselling Service report that smaller producers tend not to seek professional advice. Decision support tools that integrate financial management and production objectives also enhance business outcomes.

Focus Areas for action

- 3.1.1 Encourage and support primary producers and other small businesses to use professional advice to build capability and strengthen holistic business planning.
- 3.1.2 Actively promote 'being prepared for drought' messaging through established industry and community networks.
- 3.1.3 Provide guidance to small businesses in navigating and locating appropriate professional services.



3.2 Encourage businesses to build resilience in good years and build greater adaptability to seasonal conditions

Key insights and observations:

Most existing services and programs focus on disaster and recovery rather than building preparedness and resilience. There needs to be an increased focus on preparation and building resilience before drought. There is now an expectation landholders will have undertaken drought preparation activities and that they will

continue to improve their farm's drought resilience. Some of the more proactive banks and farm advisors are starting to assess the vulnerability of farms and businesses to different climate conditions and 'stress test' different business options. For some, the culture of tax minimisation limits their ability to invest strategically for the future. We need to better promote the sound economics of building resilience.

Focus Areas for action

- 3.2.1 Encourage businesses to take up the knowledge and skills to take adaptive action in variable seasons.
- 3.2.2 Collate existing data or, if unavailable, commission an assessment of the sound economic benefits of investing in resilience.
- 3.2.3 Promote clear messaging on the theme of self-reliance.

3.3 Improve business continuity through succession plans and transition pathways

Key insights and observations:

Succession planning can be a challenging task for families and businesses. Professional advice makes succession planning easier and more effective.

Transition pathways should be improved for those who are no longer commercially viable and either choose to, or have no choice other than, to exit from agriculture.

Focus Areas for action

- 3.3.1 Co-design solutions and support services to assist the respectful exit and transition of non-viable farmers and those who struggle with land management basics.
- 3.3.2 Encourage primary producers to seek professional advice well before exiting so they develop strategies that add value to their business.
- 3.3.3 Explore options to improve pathways and programs to attract and support young people to become world class food producers and land managers.
- 3.3.4 Explore options to strengthen programs to support and retain farm workers in their community during drought (either on country, alternate local employment, paid skill development or other education programs).

3.4 Promote diversification of local businesses and economies.

Key insights and observations:

Climate change may provide a competitive advantage for Gippsland resulting in new investors, new industries and an increasing role in Victoria's food security. The Victorian Primary Production Climate Change Adaptation Plan identifies opportunities arising from climate change and adaptation. For primary producers and other small businesses, resilience might be enhanced through changing and diversifying the current enterprise (e.g., Agri-tourism, niche and

artisanal products). At an industry and regional level resilience might be enhanced through tourism development, Aboriginal economic development, new agriculture industries, promotion of a Gippsland brand and identifying new market opportunities.

Regional and Municipal strategies for economic and agribusiness development, including rural land use strategies that protect the most productive agricultural land, are essential to support diversification of the food and fibre sector.

Focus Areas for action

3.4.1 Partner with Local Governments Authorities to support and expand diversified agricultural industries.

3.4.2 Partner with traditional owners to support implementation of the Gippsland Aboriginal Economic development strategy (including the development of new native food products and cultural experiences).

3.4.3 Implement key elements of the Destination Gippsland Strategic Plan.

3.4.4 Promote the credentials of Gippsland produce.

3.4.5 Promote ongoing industry development programs.



Image Credit: Wellington Shire Council

Theme 4

INNOVATION, RESEARCH, KNOWLEDGE SHARING AND SKILLS DEVELOPMENT



Innovation, research, knowledge, and skill development is essential to build drought resilience and adaption.

4.1 Farm systems innovation through information and technology targeted to the needs of Gippsland.

Key insights and observations:

There is an opportunity to build economic resilience and profitability using more innovative

farm systems. Gippsland needs to accelerate the development of innovative ideas and their translation into commercial operation.

Focus Areas for action

4.1.1

Acknowledge and support the key role of existing farmer networks in peer-to-peer learning that foster system innovation and knowledge sharing (through case studies, demonstration sites and online information).

4.1.2

Increase the relevance and uptake of farm innovation practices by co-designing research and extension programs with local farming communities.

4.1.3

Strengthen programs to improve awareness, skill development and uptake of digital agriculture solutions most relevant to individual farm businesses.



Image credit: Natalie Jenkins, Southern Farming Systems and Top Soil partners Far East Victoria Landcare, East Gippsland Landcare Network, Snowy River Interstate Landcare and Agriculture Victoria.

4.2 Industry innovation through collaborative research and knowledge sharing.

Key insights and observations:

The Gippsland region has specialised agricultural industries with productive dairy, meat and vegetable production that underpin fresh food exports and food manufacturing. Stakeholder feedback identified that the region could better leverage industry level collaboration and knowledge to improve drought preparedness

and resilience. While Gippsland has specialist dairy research capability, for other sectors (e.g., horticulture, cropping and grazing) we need to draw on research capabilities from industry, universities, Food and Fibre Gippsland, CSIRO and other Agriculture Victoria research centres. Food and Fibre Gippsland is partnering with Latrobe Valley Authority and agricultural industry to identify knowledge sharing opportunities.

Focus Areas for action

- 4.2.1 Strengthen collaboration and knowledge sharing between industry and those undertaking research and innovation to improve drought resilience.
- 4.2.2 Share drought related research, development and extension knowledge and activities.
- 4.2.3 Explore opportunities for industry to identify priority research and development gaps and advocate for the Victorian Drought and Innovation Hub (Gippsland Node) or other research providers to address those issues.
- 4.2.4 Identify and promote opportunities that best contribute to drought resilience arising from Smart Specialisation, the Circular Economy, new and emerging technologies and high value products.
- 4.2.5 Invest in skill development and digital technology for the manufacturing sector to implement and commercialise new products.



4.3 Building regional capability through skill development pathways, recruitment and local employment opportunities.

Key insights and observations:

The Gippsland region is undergoing unprecedented societal change due to industry disruption, rapid advances in technology, the impacts of climate change, the Covid pandemic and changing global markets. There is a strong and unmet demand for more people with the skills required by future industries. Working with the education sector will ensure that the skills

available to Gippsland businesses are future focused and aligned to changing marketplace expectations. There also needs to be an expansion of partnerships between all stakeholders to explore career pathways that will assist in boosting job creation and retention. The lack of affordable housing negatively impacts the region's ability to attract and retain professionals and skilled workers (including mental health and agricultural workers).

Focus Areas for action

- 4.3.1 Improve the capability and capacity of our young farmers by developing and promoting educational opportunities and industry pathways.
- 4.3.2 Attract and foster skilled staff by promoting Gippsland job opportunities, career pathways and lifestyle.
- 4.3.3 Recognise the importance of structured approaches to identifying employment opportunities that provide off farm income and bring new skills to the local economy during drought.



Theme 5

KEY ENABLERS ESSENTIAL TO EFFECTIVE COLLABORATION AND COLLECTIVE ACTION



Building drought resilience will be enabled by a better understanding of drought impacts, clarifying shared responsibilities and regional governance, leveraging existing local networks and partnerships, and improving digital connectivity.

5.1 Clarify drought accountabilities, shared responsibilities, regional governance and coordination (including service offering from various organisations)

Key insights and observations:

Stakeholders noted the need to clearly define drought accountabilities, shared responsibilities, governance and regional coordination arrangements and provide clearer information on

drought preparedness, seasonal conditions and dry seasons support services. The proposed actions would support improved preparedness, cross sector collaboration and earlier decision making at an individual, industry, and community level.

Focus Areas for action

5.1.1 Improve awareness and understanding of the Victorian Drought Preparedness and Response Framework.

5.1.2 Develop clear regional drought governance and coordination arrangements with appropriate industry, community, not-for-profit and agency leaders (for example, consider the applicability of current regional Emergency Management or similar arrangement to utilise existing networks and support a structured approach to drought preparedness and response).

5.1.3 Develop, maintain and communicate an 'all agencies' perspective of drought preparedness and response services.

5.1.4 Establish a Gippsland Drought Information Hub which provides access to drought related data and knowledge required by landholders and the sector to improve decision making.



Image credit: Lyric Anderson, GAgG

5.2: Consult with community groups and other existing regional and local networks to inform drought resilience programs.

Key insights and observations:

Landholders, business professionals, service providers, Catchment Management Authorities, industry representative organisations, community and Traditional Owner groups are keen that their knowledge and lived experience informs future drought resilience programs to ensure they are:

- flexible in response to business need
- acknowledge multiple events and cumulative impacts impacting the one business
- delivered as one integrated business support package
- empowering communities and businesses to be self-reliant.

Local Government Authorities have a specific charter and processes for community consultation and are well placed to coordinate input from many groups to inform future drought resilience programs. Many stakeholders note the pivotal role

Local Government plays in drought preparedness with a focus on developing the capacity and resilience of their communities before, during and after drought.

An excellent example of this is the Gippsland drought response proposal – *Looking Ahead* (developed by the East Gippsland and Wellington Local Government Authorities, 2019) which identified options to support landholders through transition, recovery and adaptation. The Victorian Government acknowledged this placed-based community-led strategy and funded some of its recommendations (e.g., the establishment of the Gippsland Agricultural Group demonstration site at Bengworden).

Traditional Owners have a holistic view of country (as described in Whole of Country Plans) and have a deep understanding of the impacts of major events on the natural environment, culture, cultural assets, economic independence, and community health and wellbeing.

Focus Areas for action

- | | |
|-------|--|
| 5.2.1 | Partner with Local Government Agencies and existing community leaders to genuinely consult and co-design drought resilience programs. |
| 5.2.2 | Partner with Traditional Owners to implement Whole of Country Plans. |
| 5.2.3 | Each agency and organisation to consider drought preparedness and incorporate mitigation actions into relevant strategies and plans. |
| 5.2.4 | Explore options and governance arrangements that empower communities to directly manage and allocate funding to address local investment priorities. |

5.3 Improve digital connectivity to support community connection

Key insights and observations:

Digital connectivity and skills are critical to small business and the agriculture and manufacturing sector to support business innovation and access to new and existing markets.

Digital connectivity and skills are also essential to support flexible working arrangements, more inclusive access to services, and community wellbeing and connection.



Focus Areas for action

5.3.1 Implement the recommendations of the *Gippsland Regional Digital Plan*.

5.3.2 Promote other options to improve data and communication connectivity.

Conclusion

“THE BEST TIME TO
PLANT A TREE WAS
50 YEARS AGO,
THE SECOND-BEST
TIME IS NOW.”

This Plan provides a Framework for focusing future effort and guiding investment decisions to further build drought resilience in Gippsland.

This framework is the first step in identifying Gippsland drought resilience needs and priorities and recognises that continued collective and deliberate action is necessary for these needs to be met.

This Plan has been drafted for, and with input from, community members and organisations who have an important part to play in realising its vision for a more drought resilient region.

This Plan can be used by the Gippsland community, organisations, industry, the not-for-profit sector, and all levels of government to:

- coordinate investment
- collaborate for shared outcomes
- inform future drought resilience priorities
- develop drought resilience programs
- monitor resilience to future droughts.

Some of the Focus Areas identified can be addressed directly by the Gippsland community, while others will require broader cooperation from governments, agencies, statutory bodies, not-for-profit organisations, and the private sector. The Plan contains unfunded activities, and some Focus Areas can only be addressed with further investment.

In addition, the Focus Areas identified are a snapshot in time. The Plan will need to evolve in response to:

- Further conversations with community groups (particularly with additional Traditional Owner groups and community health services).
- Learnings and insights from other regional drought resilience plans (including the adjacent Ovens Murray and South-east New South Wales regional plans when they are developed).



A process to continue to review the content of the Plan and implement actions that address the Focus Areas are yet to be determined, however they are likely to be influenced by conversations with regional organisations that agree to oversee the Plan in the long-term.

Next steps to support the implementation of the Plan could include:

- Identifying an ongoing custodian for the Plan to facilitate ongoing conversations with community and oversee the development of a detailed implementation plan
- Establishing a fit-for-purpose Gippsland Drought Resilience Group with appropriate leaders from community, industry, not-for-profit and government agencies to ensure the effective governance, coordination and collaboration necessary to implement the Plan.

This approach will support Gippsland communities to be better prepared for, and capable of managing, drought in pursuit of a prosperous and sustainable future.

The Plan is an important step in building regional drought resilience. A supplementary document '*Regional monitoring, evaluation and learning*' is provided to guide how progress towards regional outcomes is measured and communicated.

The Reference Group acknowledge the experience, knowledge and generosity of organisations and individuals who contributed to the development of this Plan.

APPENDICES

Appendix 1. **Stakeholders consulted during the development of the plan**

The Regional Drought Resilience Plan was based on in-depth conversations with the organisations and individuals listed below.

The Gippsland Drought Resilience Plan Reference Group was established to oversee engagement and to ensure that the identified Outcomes and Focus Areas for Action represented a coherent and balanced view of stakeholder feedback.

We acknowledge and appreciate everyone's experience, insights and support.

We also acknowledge that there needs to be further conversations with community groups particularly with other Traditional Owner groups and more community health services.

Community and not-for-profit organisations

Australian Red Cross
(State-wide and regional programs)
Bairnsdale Neighbourhood House
Gippsland Emergency Relief Fund
Lions (Heyfield)
Lions Need for Feed (Victoria)
Salvation Army
Victorian Council of Churches (VCC) Gippsland

Traditional Owner Organisations

Gunaikurnai Land and Waters Aboriginal Corporation

Community Health Organisations

National Centre for Farmer Health
Bush Nursing Centre

Community leaders from across Gippsland

Baw Baw
East Gippsland
South Gippsland
Wellington
Bass Coast

Local Government Authorities

Bass Coast Shire Council
Baw Baw Shire Council
East Gippsland Shire Council
Latrobe Shire Council
South Gippsland Shire Council
Wellington Shire Council

Education and capability building

Federation University
(Future Regions Research Centre)
TAFE Gippsland (Rural Science programs)

Natural resource management organisations

East Gippsland Catchment Management Authority
Gippsland Water
Landcare networks:

- Bass Coast network
- East Gippsland Landcare Network
- West Gippsland Network
- Maffra Landcare Group
- Clydebank Landcare Group

Parks Victoria
Southern Rural Water
West Gippsland Catchment Management Authority

Regional development organisations

Destination Gippsland
Food & Fibre Gippsland

Small business organisations

Orbost & District Chamber of Commerce & Industry
Small Business Victoria

Agricultural industry and farm business services

Agriculture industry representatives
Farm business service representatives including:

- Agriculture consultants
- Stock Agents
- Banking & Finance

Farmer groups & local business leaders, including:

- Gippsland Agricultural Group
- Gippsland Jersey
- Municipal agriculture sector advisory groups

Rural Financial Counselling Service, Gippsland
Small Business Mentoring Service

Major farmer, industry and community events

East Gippsland Field Days (Bairnsdale, April 2022)
East Gippsland Red Meat Conference
(Bairnsdale, February 2022)
Farm world (Lardner Park, March 2022)
Farming for Success (Sale, March 2022)
National Recovery and Resilience Agency
community events (Buchan, Omeo, Nowa Nowa,
Mallacoota; February 2022)

Other Future Drought Fund program leaders

Victorian Drought Resilience Adoption
and Innovation Hub -Gippsland Node
(Food & Fibre Gippsland)
Sowing the Gap (East Gippsland CMA)
Leadership development program
(Australian Rural Leadership Foundation)
Farm resilience planning program
(Agriculture Victoria)
Regional Drought Resilience Plans –Goulburn and
Wimmera Southern Mallee (Agriculture Victoria)

**Gippsland Regional Drought Resilience Plan
Reference Group organisations**

Agriculture Victoria
Australian Red Cross
Baw Baw Shire Council
Department of Environment, Land, Water
and Planning*
East Gippsland Shire Council
Emergency Recovery Victoria
Food & Fibre Gippsland (Drought Hub Node)
Regional Development Victoria
Rural Financial Counselling Service-Gippsland
South Gippsland Shire Council
Southern Rural Water
Wellington Shire Council
West Gippsland Catchment Management Authority

Government Agencies and Statutory Authorities

Country Fire Authority
Department of Jobs, Precincts and Regions:*

- Agriculture Victoria
- Latrobe Valley Authority
- Cross Border Commissioner
- Regional Development Victoria
- Rural Assistance Commissioner
- Small Business Victoria

Department of Justice & Community Services:

- Emergency Recovery Victoria
(formerly Bushfire Recovery Victoria)

Department of Environment, Land, Water
and Planning:*

- Climate Change Adaptation,
Community & Partnership Programs
- Fire & Forest Operations

Department of Family, Fairness and Housing
Emergency Management Victoria
Gippsland Regional Emergency Management
Team (REMT)
National Recovery and Resilience Agency
Victoria Police

*As of 1 January 2023 the Department of Environment, Land, Water and Planning and the Department of Jobs, Precincts and Regions were abolished. Some agencies within these departments were transferred to the newly established Department of Energy, Environment and Climate Action while others were transferred to the Department of Jobs, Skills, Industry and Regions.

Appendix 2.

Drought related strategies and programs

This Appendix acknowledges the existing strategies and programs that support, or are relevant to, building drought resilience in Gippsland. It is intended to be used as a resource document.

Government Policy perspectives

Australian Government Drought Program (Department of Agriculture, Water & Environment) including:

- Drought Policy,
- Drought & Rural Support programs,
- Future Drought Fund Regional Drought Resilience Planning Program Framework (2021, DAWE).
- National Drought Response, Resilience & Preparedness Plan (2019),
- National guidelines for drought accountabilities (In development, 2022).
- Productivity Commission (2009), Government Drought Support

Victorian Government agriculture, climate adaptation and drought programs including:

- A strategy for Victorian Agriculture (2021)
- Victorian drought preparedness and response framework
- The Victorian Climate Change strategy, agriculture sector pledge and primary production adaption action plan, (2021)
- Primary Production Climate Change Adaptation Action Plan 2022-2026.pdf
- Gippsland Climate Change Adaptation strategy (DELWP, 2021)
- Previous and future impacts of drought in Victoria - gap analysis report. (May 2022, Frontier Economics).

Community resilience and health perspectives:

East Gippsland Building Community Resilience (Centre for Rural Communities and East Gippsland Network of Neighbourhood Houses, 2015).

From inside the farm gate: rural women's stories of surviving and thriving (National Centre for Farmer Health, 2021).

Gippslands-Future-Health-and-Community-Services-Workforce.pdf (lva.vic.gov.au)

National Centre for Farmer Health summary of the Royal Commission into Victoria's mental health system. (2021).

Review of needs of drought affected farming communities in Gippsland (Australian Red Cross, 2019).

Traditional Owner perspectives

Aboriginal Economic Development Strategy for Gippsland (Gunaikurnai Land & Water Aboriginal Corporation, 2021).

East Gippsland Culture & healing recovery sub-plan (East Gippsland Shire Council, 2020) – the first Victorian recovery plan to explicitly consider first nations perspectives.

Whole of Country Plans (e.g., Gunaikurnai Land & Water Aboriginal Corporation, Whole of country plan , 2015).

Municipal (local, integrated, place-based) perspectives

Community Development Plans

Community Health & Wellbeing Plans

Emergency Management Plans

East Gippsland Bushfire Recovery Plan (East Gippsland Local Government Authority, 2020)

Economic Development Plans including:

- Agribusiness development strategies
- Rural land use strategies
- Business concierge and entrepreneur facilitation programs
- Public Health Plans (in development)
- Farmer surveys and small business data

Gippsland drought response proposal – Looking Ahead (East Gippsland & Wellington Local Government Authorities, 2019).

Regional resilience perspectives

Community resilience framework for emergency management. 2017. Emergency management Victoria.

Goulburn Murray Resilience Strategy – Adapt Transform, Thrive (2020).

New Possibilities. (2020) Central West Regional Resilience Strategy. Championing resilience and prosperity across Central West Queensland.

Ramjan. R. (2012) Combining social capital and technology for drought resilience in agriculture. Macquarie university, Australia.

Productivity Commission 2003, Social Capital: Reviewing the Concept and its Policy. Implications, Research Paper, AusInfo, Canberra.

Walker, B. (2020). Resilience: what it is and is not. Ecology and Society.

Wilhite, D.A.; and M.H. Glantz (1985).

Understanding the Drought Phenomenon: The Role of Definitions. Water International.

Natural resource management perspectives:

Central & Gippsland Sustainable Water Strategy (DELWP, in development, 2022)

Climate Adaptation Plan (CAP), Growing Southern Gippsland project

Gippsland Plains and Strzelecki Ranges Conservation Action Plan. (Parks Victoria).

Gippsland Water Urban Water Strategy (2017)

Improving domestic and stock access (Southern Rural Water, 2020)

Jenkins, N. and Coleman, K. (2022) What is my paddock telling me? A guide to identifying paddock problems in East Gippsland. East Gippsland Landcare Network, Victoria.

Lake Wellington Land and Water Management Plan; A plan for sustainable irrigation in the Lake Wellington Catchment 2018-2028.

Managing extreme water shortages in Victoria: lessons from the Millennium drought (DELWP, 2016)

Nature Conservation Strategy (Parks Victoria, 2021)

South Gippsland Water Urban Water Strategy (2017)

Regional Catchment Strategies for East Gippsland, West Gippsland and Port Phillip & Westernport Catchment Management Authorities (2022).

Weir, E. and Coleman, K. (2020) East Gippsland Pastures: A glovebox guide to identifying pasture plants of East Gippsland. East Gippsland Landcare Network, Victoria.

Emergency management perspectives

Bushfire recovery consultation report (Victorian Council of Social Services, 2020)

Community Resilience Framework for Emergency Management (EMV, 2020)

Gippsland Regional Emergency Management Plan (REMT, 2021)

Economic development perspectives

Aboriginal Economic Development Strategy for Gippsland (Gunaikurnai Land & Water Aboriginal Corporation, 2021)

Accelerating growth in the Gippsland Food & Fibre sector (KPMG, 2019, commissioned by the Gippsland Regional Partnership).

Gippsland Future Direction – 2040 (Committee for Gippsland, 2020)

Gippsland Regional Plan 2020-2025 (Regional Development Australia, One Gippsland, Committee for Gippsland, and the Gippsland Regional Partnership, 2020).

Regional Economic Development Strategy (Regional Development Victoria, 2022)

Towards 2030 Gippsland Destination Management Plan (Destination Gippsland, 2022).

Regional Business and Economy Recovery Plan – Gippsland Bushfires (RDV, 2020)

Visitor recovery & reform plan (Department of Jobs, Precincts & Regions, 2021)

Gippsland Regional Digital Plan. Regional Partnerships Gippsland. Committee for Gippsland.

Regional Digital Plans - Regional Development Victoria (rdv.vic.gov.au)

Digital Connectivity – Gaps and Priorities. Report on the lived experiences of communities, businesses and agencies across East Gippsland. Report provided for the East Gippsland Shire Council, September 2021.

Agricultural perspectives

Adapting agricultural practice in Gippsland (Federation University, Reeves et al., 2021).

Climate Futures – Opportunities and Challenges: climate adaptation for dairy farming on the Alpine valleys.

Drought preparedness – More Beef from Pastures (Meat & Livestock Australia)

Farm decision making: The interaction of personality, farm business and risk to make more informed decisions (2015)

Future Drought Fund - Farm Resilience Planning Program (Agriculture Victoria)

Future Drought Fund – Sowing the Gap Project (East Gippsland CMA and East Gippsland Shire Council)

Victoria Drought Resilience Adoption and Innovation Hub (vicdroughthub.org.au)

Small business perspectives

Business Recovery Advisory Service monthly reports (Bushfire Recovery Victoria).

Disaster resilience for business toolkit (Small Business Mentoring Service, 2011)
Are you ready: surviving small business disaster

East Gippsland Agri Business Program, delivered by ION Group

Entrepreneurs' Programme Growth Roadmap and Strengthening Business (AusIndustry)

Small Business Natural Disaster Preparedness and resilience review (Australian Small Business and Family Enterprise Ombudsman, in progress, 2022)

Knowledge, research & innovation perspectives

CSIRO Farm drought resilience research program
Ellinbank Dairy Smart Farm (Agriculture Victoria)

Future Drought Fund Victorian drought resilience and innovation hub - Gippsland Node (Food & Fibre Gippsland)

Future Regions Research Centre (Federation University)

Gippsland Agriculture Group Research Farm
Macalister demonstration farm



For more information on the Future Drought Fund visit:
[**www.awe.gov.au/dfd**](http://www.awe.gov.au/dfd)

For more information on Victoria's Regional Drought
Resilience Planning program visit:
[**www.agriculture.vic.gov.au/futuredroughtfund**](http://www.agriculture.vic.gov.au/futuredroughtfund)

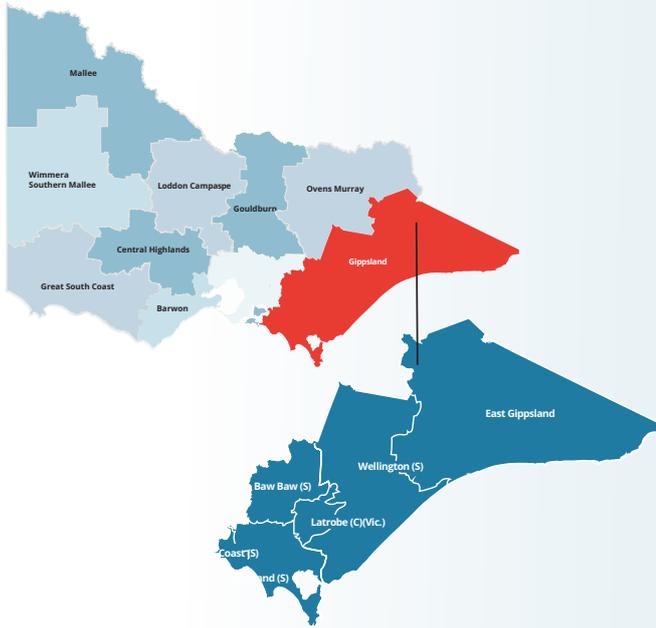


Drought in the Gippsland Region

Information to support the Gippsland Regional Drought Resilience Plan | June 2022



This research was jointly funded by the Australian Government
and Victorian Government under the Future Drought Fund.



Regional summary

The Gippsland region is diverse with beaches, snowfields and rainforests, with the region covering 33,000 square kilometres.. The region encompasses the local government areas (LGAs) of Bass Coast, Baw Baw, East Gippsland, La Trobe, Southern Gippsland and Wellington. The 2016 census reported a population of 271,266 people, with significant population growth in areas on the periphery of Melbourne. The 2016 census also reported a Gross Regional Product of \$15.8bn.

The Gippsland economy is diverse, with agriculture, forestry and fishing making up 9% of employment. The region also has a strong energy sector, with coal mining and electricity generation in the west and off-shore oil and gas production.

Gippsland is highly connected to Melbourne which offers a multitude of economic benefits for the region including access to the airport and the port, lower freight costs and increased tourism benefits. However, this is also driving population growth putting pressure on land use and the current services.

The region recently experienced drought conditions during the Millennium drought and 2017-2019.

Assessing the impacts of drought

The Regional Drought Resilience Planning Program (RDRP Program) is about planning with communities at the regional level to better prepare for the next drought and forms part of the Commonwealth Government's Future Drought Fund.

Economic analysis, research and stakeholder discussions have been undertaken to consider three questions:



Consultation with local stakeholders was a key factor to the analysis, which enabled a better and more localised understanding of how droughts impact the region.

This research was jointly funded by the Australian Government and Victorian Government under the Future Drought Fund.

Drought

The definition of drought varies depending on region, needs and disciplines. Below are 4 ways to measure whether a region is in drought.



1. Meteorological drought:
degree of dryness
or rainfall deficit



2. Hydrological drought:
precipitation shortfalls
on surface or subsurface
water supply



3. Agricultural drought:
links various characteristics of
meteorological (or hydrological)
drought to agricultural impacts



4. Socioeconomic drought:
associates the supply and
demand of some economic
good with elements of
meteorological, hydrological,
and agricultural drought.

The first three approaches deal with ways to measure drought as a physical phenomenon. The last deals with drought in terms of supply and demand, tracking the effects of water shortfall as it ripples through socioeconomic systems.

However, there is no one definition that encompasses all factors that bring rise to drought conditions — and the resultant impacts on regions and communities. Drought is complex and dynamic, meaning a universal 'definition' is near impossible. For example, when referring to the Millennium drought in practice it was a combination of the types of drought listed above.

Assessment framework

In order to consider how drought affects farms and the wider community, the following analytical framework distinguishes between agricultural impacts and non-agricultural impacts of drought. The framework is designed to consider the implications of specific drought impacts and what the outcomes of these implications will be. Within the two distinctions, the framework considers the social, economic and environmental impacts, to develop a more complete understanding of how drought impacts flow through the community.

Figure 1 demonstrates how the analytical framework can be applied to agriculture. Drought reduces agricultural productivity, which results in a change in primary production on farm. This impacts farm income, the consumption of farm inputs, and the production of farm outputs. These on-farm implications of drought flow through to the community to generate a range of outcomes. The existence of agricultural markets (e.g. sheep and cattle prices, crop prices, etc) means the impact of drought on agriculture is easier to quantify than other non-market impacts of drought.

Figure 1 also considers how drought impacts non-agricultural settings. Drought can lead to significant water restrictions and low availability of water in lakes, rivers and dams. A reduction in water availability may mean community greenspace is reduced which will in turn reduce liveability benefits in the community and the amenity values from the green space. Furthermore, there are flow on effects if parks and sportsgrounds cannot be used including impact on community cohesiveness. A lack of water in lakes, rivers and dams could also hurt tourism in the region as there is a reduced ability to boat, water ski or fish. This in turn reduces the income and spending within the regional economy.

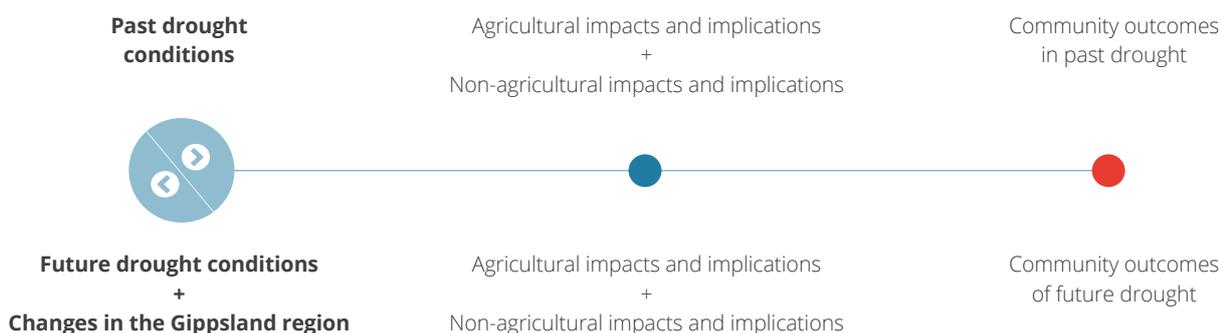
Figure 2 demonstrates the structure of the analysis for both past and future drought periods, with considerations from both agricultural and non-agricultural impacts of drought flowing through to community outcomes.

Figure 1 Impacts of drought and flow on effects

➤ Drought impact	➤ Implications	➤ Outcomes	
 <p>Change in agricultural productivity</p>	<ul style="list-style-type: none"> • Change in primary production • Change in farm income • Change in farm inputs • Change in farm outputs 	<ul style="list-style-type: none"> • Reduced spending in the community • Reduced demand for ag farm services (but could increase in demand for feed) • Reduced output associated 	<ul style="list-style-type: none"> • transport, processing/ manufacturing • Reduced primary production for distribution and value-add • Mental toll (and potential migration)
 <p>Water restrictions</p>	<ul style="list-style-type: none"> • Households: outdoor water use • Community green assets: parklands and sportsgrounds 	<ul style="list-style-type: none"> • Liveability and mental health • Mental toll • Potential migration 	<ul style="list-style-type: none"> • Access to green space and flow on effects (i.e. footy clubs, parent groups etc) • Amenity values from green space
 <p>Water availability in lakes, rivers & dams</p>	<ul style="list-style-type: none"> • Less water available for recreation (boating, water skiing, etc) • Reduced fishing opportunities 	<ul style="list-style-type: none"> • Reduced recreation and tourism 	

Note: this summary does not provide an exhaustive list of impacts, but rather is about providing a consistent evidence base across Victoria's nine regions

Figure 2 Structure of analysis





01 Past drought conditions

02 Drought agricultural impacts and implications + Non-agricultural impacts and implications

03 Community outcomes in past drought

01 Past drought conditions

Large drought events have had wide effects across Victoria, with each drought being different in its regional severity and distribution. The last 25 years has seen Gippsland suffer extensive drought periods, starting with the Millennium drought from 1997-2009 and more recently the dry conditions experienced from 2017-2019. Rainfall is particularly important in Gippsland, where the majority of farms are not connected to extensive irrigation networks as in Northern Victoria.

The Gippsland region is vast and diverse, and as such individual areas within the region may experience different meteorological

conditions. The historical rainfall and temperature charts provide evidence of the severity of these recent drought events (**Figure 3**), however this data may not represent the conditions experienced by all parts of Gippsland.

Low rainfall is exacerbated by high temperatures to create drought conditions. The period of 2017-2019 was particularly dry and hot, with the annual rainfall in Bairnsdale at or below the 10th percentile range for all 3 years. At the same time the average maximum temperature was well above the median. This 3 year drought was referred to as a 'green drought', when paddocks looked green but pasture growth struggled with low rain and weeds.

Figure 3 Annual rainfall and average maximum temperature in Gippsland

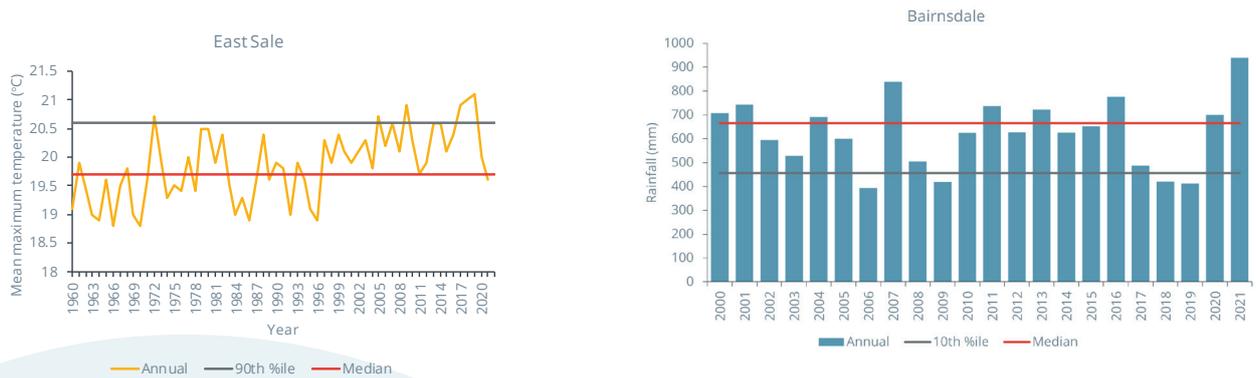
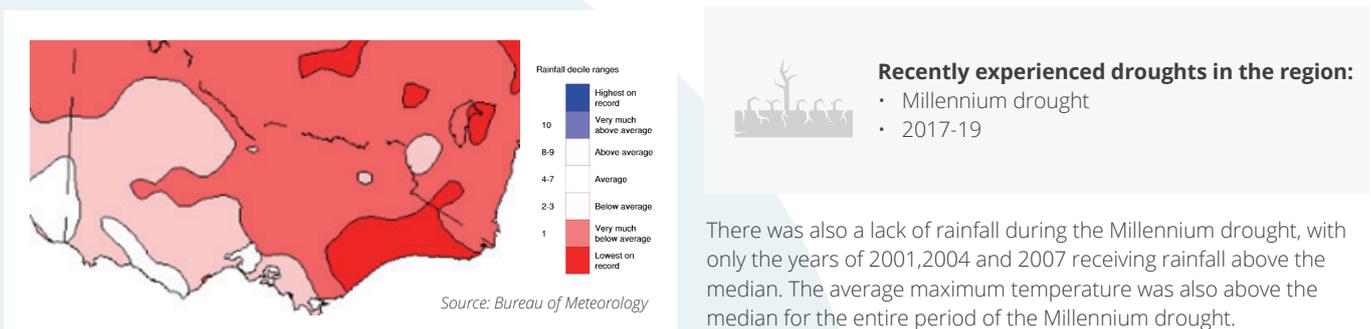


Figure 4 Victorian rainfall decile ranges during 2017-2019



02 Drought agricultural impacts and implications + Non-agricultural impacts and implications

Agricultural production in the Gippsland region is dominated by livestock but also has significant vegetable production in the eastern part of the region.

Milk production in Eastern Victoria, which includes the Gippsland region, has remained relatively steady around 1.9 to 2 billion litres from 2000 to 2022, with neither the Millennium drought or the 2017-2019 drought having a significant impact on production. In aggregate,

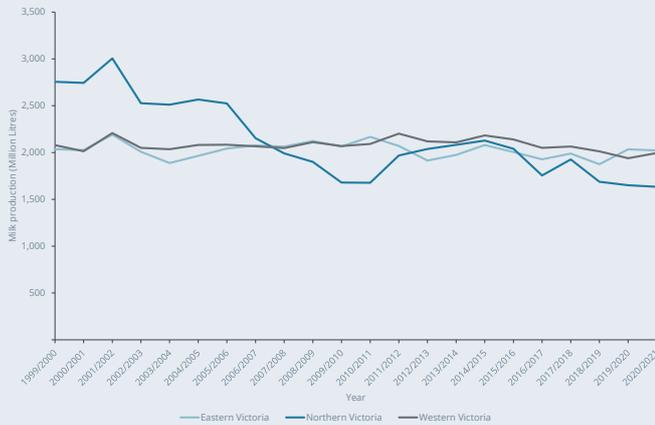
the Gippsland region has buffers for maintaining dairy production during dry periods, including:

- the Maffra area having access to the Macalister Irrigation district
- the ability for farms to bring in fodder to replace pasture and to transport fodder from the Macalister irrigation district to drier regions of Gippsland
- many dryland farms having on-farm dams to provide supplementary irrigation
- the ability to grow silage and forage crops as a buffer.



Drought in the Gippsland region

Figure 5 Victorian annual dairy production

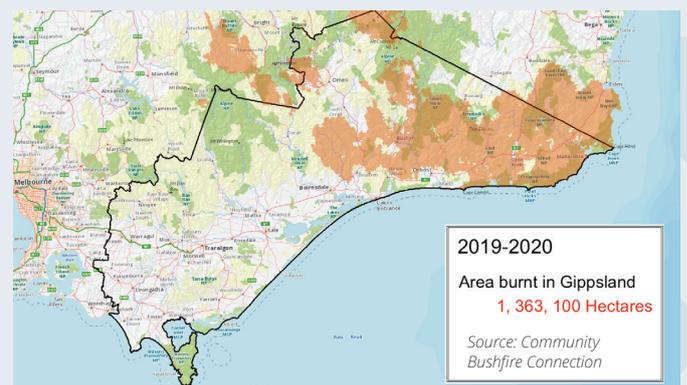
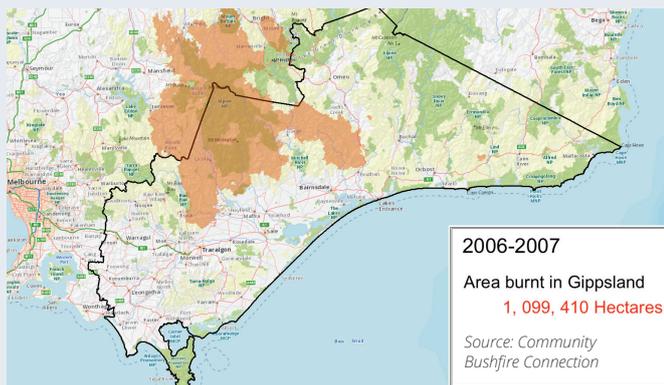


Furthermore, conditions vary greatly across the Gippsland region, which provides a buffer against dry periods. This means that some areas of the region that are less affected by drought can offset those areas that are highly impacted. For example, in 2017-18 and 2018-19, the rainfall deficit (the difference between observed annual rainfall and the long-term average) was 15% and 19%, respectively. However some reference farms in the Victorian Dairy Farm Monitor Project reported deficits of up to 45% in 2017-18 and 33% in 2018-19, demonstrating how localised rainfall deficits can be. It was particularly severe for East Gippsland, which suffered poor growing conditions in both the 2017-18 and 2018-19 seasons.

This was consistent with the experience of livestock producers. The seasonal conditions in 2017-18 were challenging with lower pasture availability West and South Gippsland, and East Gippsland experienced poor growing conditions. For farms located in central and eastern parts of the region, dry conditions leading into spring 2018 reduced pasture growth and placed an increased dependence on purchased feed.

Large fires bring a different dynamic to drought impacts. Bushfires disrupt large sections of the community and leads to loss of land, stock and life. The areas affected by fire have differed between droughts (**Figure 5**).

Figure 5: Bushfires in the Gippsland region



During the Millennium drought it was central and eastern Gippsland that experienced widespread bushfires, while in 2019-2020 much of the damage occurred in East Gippsland.

Town water

Water restrictions were required during the Millennium drought with some towns, such as Leongatha and Korumburra at stage 4 level restrictions. Water trading was used in the Latrobe river system to address water shortfalls and irrigators, Gippsland Water and the power generators were all net purchasers.

Recreation and Tourism

A significant percentage of tourism in the Gippsland region is reliant on coastal and natural landscapes which are mostly resilient to drought. The proximity of some areas of Gippsland to Melbourne delivers strong tourism outcomes. However low water levels in the Gippsland Lakes make it difficult to collect fresh bait and stagnant water causes blue green algae. This decreases the number of tourists to the area which in turn affects other types of local business which may rely on seasonal tourist influxes.

The bushfires in 2019-20 had a severe impact on tourism, and this was compounded by traffic disruption and road closures near the coast, and air quality issues.

Environment

Gippsland has a number of ecologically and recreationally important wetlands including the Gippsland lakes and Corner Inlet, both of which are Ramsar listed wetlands. There were negative impacts on the Gippsland environment during the Millennium drought including soil erosion, wildlife overabundance and welfare and loss of habitat.

03 Community outcomes in past droughts

As a result of agricultural response to drought

- Farming communities are severely impacted during periods of drought, due to:
- Financial pressures resulting from reduced on-farm income and increased costs
- On-farm issues mostly relating to lack of water and feed for stock
- Pressures from invasive native and pest animals on farms
- Physical and mental health and wellbeing impacts on individuals and families
- Flow on financial pressures being experienced by supporting businesses in the community.

Agriculture is an important segment of the regional economy — contributing 12.5% of the 'value add' in south west Gippsland, 13.1% around Baw Baw, 12.9% in Wellington and 8.6% in East Gippsland. The direct impacts of drought on farm income will flow through to cause community impacts through reduced income and employment, especially on-farm labour and agricultural services. The impacts of drought would be expected to be limited in more densely populated and economically diverse parts of Gippsland — such as in and around major towns. In contrast, smaller communities heavily reliant on agriculture would be comparatively more impacted by drought.

From 2017-18 to 2018-19, the number of Rural Financial Counselling Service clients in Gippsland increased by 53%. This indicates a significant increase in the financial pressures of agricultural and non-agricultural businesses due to drought and other industry pressures.

ABS Census data from 2006 to 2016 identified that the percentage of employment across the top 3 industries decreased across the Gippsland region (except for in the Baw Baw LGA), indicating a diversification of the region's economy. The percentage of the community directly employed in the agricultural industry also decreased across the period. However, despite this diversification and spread of employment, Infrastructure Victoria notes that ongoing structural shifts, such as the reduction in the mining and electricity industries, means that the region's economy is becoming increasingly dependent on agriculture and associated food processing industries.

As drought brings ongoing stresses to regional communities, and will likely be more prevalent in the future, a growing acceptance and use of counselling would be positive for communities. Stressed people are more likely to make bad decisions, and as such counselling may assist individuals in responding to drought. The existing health services in regional centres have the potential to be expanded during times of drought to assist in alleviating the social impacts of drought on mental health and broader health problems related to low water flows, poor water quality and dust. For example, the Empowering Our Communities drought support program was rolled out to the East Gippsland and Wellington Shires during the 2017-2019 drought. This program facilitated access to service and resource to address mental health and wellbeing needs.



“

As drought brings ongoing stresses to regional communities, and will likely be more prevalent in the future, a growing acceptance and use of counselling would be positive for communities

”



01 **Future drought conditions + Changes in the Gippsland region**

02 **Drought agricultural impacts and implications + Non-agricultural impacts and implications**

03 **Community outcomes in past drought**

Future Impacts of drought

Future impacts will differ from past impacts depending on the severity of future droughts, and the changes in the characteristics of the Gippsland region and its communities.

01 Future drought conditions

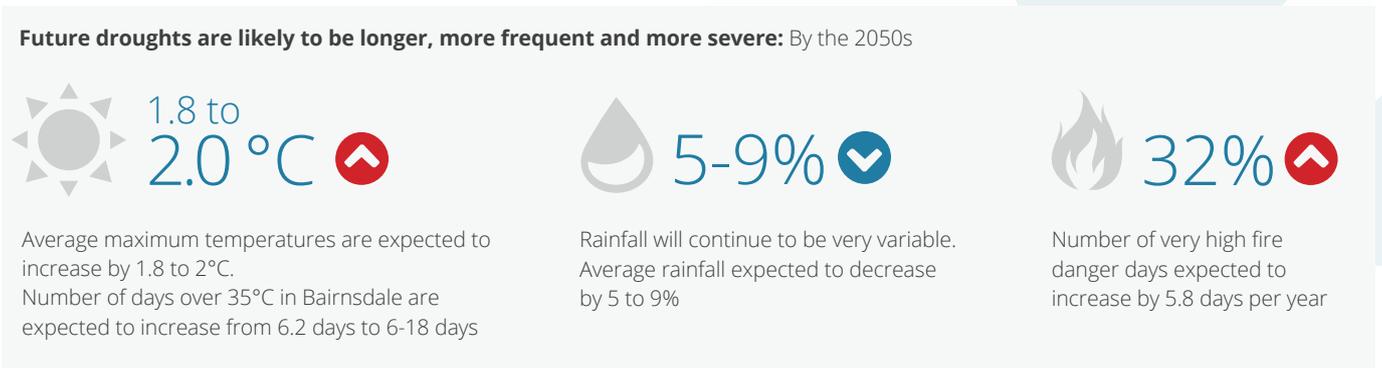
Climate change is likely to increase the variability of the weather in the Gippsland region with future droughts expected to be longer, more frequent and more severe. Climate projections in Figure 6 show that by 2050 the Gippsland region on average will be hotter, drier and be exposed to a growing number of fire danger days. Similar to the past, the region and sub-regions will continue to face variable conditions within and across seasons — however in the future this variability will be around a lower average rainfall and higher average temperature than previously experienced. This means that, compared to current conditions, it is likely that parts of Gippsland will face some seasons with rainfall significantly below and temperatures significantly above current averages.

+ Changes in the Gippsland region

Significant changes in the Gippsland region contribute to more diversified practices to assist in drought resilience, including:

- Planning and actions to improve water security
- Changes in livestock industries, with an observed shift from dairy cattle towards beef in East Gippsland
- Continuing recovery from successive disaster events — drought, floods and fires — all in the context of the Covid19 pandemic
- Covid population changes.

Figure 6 Projections of future climate in Gippsland



02 Drought agricultural impacts and implications + Non-agricultural impacts and implications

In response to the future increase in the likelihood and severity of drought (given expected increasing temperatures and decreasing rainfall), agricultural production in dairy and livestock, and vegetable farming operations will continue to be exposed to drought impacts. The prevailing circumstances of a future drought — such as commodity prices, interest rates and fuel and fertiliser costs — will also play a role in resultant impacts.

The diversity of water sources in the Gippsland region will continue to create a buffer for some farmers to drought impacts. Those farmers that use water from rivers, creeks, lakes and groundwater are likely to experience impacts from reduced water availability during drought times. Farmers that have access to irrigation water are likely to be somewhat resilient to drought impacts at least in the shorter term. A reduction in water availability will impact all agriculture production in the Gippsland region.

Town water

Town water security planning has improved building on lessons from drought. Likewise, Urban Water Strategies are now required to incorporate future impacts of climate change (including potential droughts). Since the Millennium drought, water corporations have undertaken works to increase town water security:

- Westernport Water has raised the dam wall at Candowie Reservoir to double the available storage and has established a connection to the pipeline linking the Victorian Desalination Plant to Cardinia Reservoir.
- Gippsland Water has addressed vulnerabilities to Boolarra (connected to the central Latrobe Valley grid in 2012), Seaspray (augmented with a large storage that provides at least 6 months supply in 2013) and Thorpdale (with regular potable water supply by truck). Other boosts to water security include the purchase of additional water entitlement in Blue Rock Reservoir for Latrobe Valley towns and industries (2014), and interconnecting the Moe and Warragul potable networks in 2019. Looking forward, Coongulla will be connected to the Heyfield system supplied by the Thomson River, and it is proposed that increased access to Tarago Reservoir will be secured to supply the rapidly growing towns of Warragul and Drouin.
- East Gippsland Water has undertaken notable water storage upgrades benefiting customers in the Bairnsdale (Wy Yung), Paynesville, Eagle Point, Lakes Entrance and Mallacoota areas. Major new water storages and a water treatment plant have come online at Woodglen, benefiting some 24,000 people along the Mitchell River system, and an additional water storage basin has been constructed at Omeo.

Recreation and Tourism

Tourism initiatives that are not dependent on water availability will continue to provide income to the Gippsland region. COVID-19 has provided a boost to regional travel and relocation. The continued development of Gippsland's extensive coastline and lakes district will provide further drought diversification for the region.

Environment

In land lakes, rivers and dams are likely to be at lower levels during times of drought which will impact the native biodiversity living in and relying on these water bodies. There is likely to be a lack of food and drinking water for wild animals living in the national and state parks in the region. Additionally, the increased risk of wildfires will have significant environmental and economic impacts. Coastal areas in the Gippsland region are less likely to experience environmental impacts of drought.

03 Community outcomes in future droughts

The increased likelihood and severity of drought in the future will mean that the drought impacts on the community from agricultural consequences of drought are expected to be larger than have been historically observed.

The diversity of the Gippsland region will continue to mean that some areas will be impacted by future droughts more than others. While it is not possible to predict which area within Gippsland will be more affected than others, smaller communities that are highly dependent on agriculture and more geographically isolated will be most exposed.

Economic modelling of a potential future 3 year drought across Gippsland estimated impacts differed between different parts of Gippsland with GDP in the subregions falling 3-7% and employment falling 3-4.5%. This flowed through the region reducing consumption/spending by 5-8%. Importantly, these average measures overly very diverse outcomes between different farms and areas of Gippsland.

Access to local mental health services will be vital as drought conditions become more prevalent. Not only are mental health services important during times of drought, but improved mental health increase a person's ability to adapt. This can improve drought resilience by allowing people to effectively plan for drought conditions.

Greenspace and associated community sport are drivers of community spirit and liveability within local communities in the region. Water Corporations and Councils have a strong understanding of the importance of greenspace for their communities so water availability will have to be at high risk before community greenspace areas do not receive water. However, should town water supply not allow watering of gardens this will have a mental health toll on residents.

The Gippsland region is one of the most diverse regions in Victoria, with impacts from drought likely to be highly varied. Areas of Gippsland that have a high reliance on agricultural industries will experience significant community impacts from drought.





Vulnerabilities and gaps in preparedness

Agriculture in Gippsland benefits from relatively reliable rainfall but the diversity of Gippsland means that the individual farm experience during a 'drought' can vary significantly.

Historically reliable rainfall means that production systems have not had to incorporate the same degree of adaptability as seen in other regions of Victoria — for example, the transformation in dairying in Northern Victoria to cope with the range of water and other pressures. Kiem and Austin in their paper *Drought and the Future of Rural Communities*, suggested there is value in shifting from notions of 'drought as crisis' towards acknowledging the variable availability of water and that multi-year droughts should not be unexpected, and may even become more frequent.

The region is also still recovering from recent, successive disaster events. If another drought occurs while the communities across the region are still re-establishing themselves, they may be more vulnerable and less able to adapt to the prevailing challenges.

Diversification is a key mechanism for the regional economy to contain the drought impacts flowing from agricultural sector. Towns throughout the Gippsland region have varying degrees of diversification with larger, centrally located towns more likely to experience these benefits. Specifically:

- The main regional centres in the Gippsland Region include Traralgon, Bairnsdale, Sale Moe, Morwell, Warragul, and Drouin. These centres include several key health services, retail, construction and education services which provides diversification to the region. This assists in helping the region develop their drought resilience. Furthermore population growth

is driving diversification in the region. These towns are likely to be relied upon by smaller towns during times of drought. Townships within an approximately 50 km radius of these centres provide people with the attraction of living in a smaller community, lower cost of housing but having employment opportunities in the larger centre. There may be a migration to these larger centres during times of drought as those employed in the agriculture sector seek a secondary income. The health services in these regional centres have the potential to be expanded during times of drought to assist in alleviating the social impacts of drought on mental health and broader health problems related to low water flows, and poor water quality.

- At the other end of the spectrum is East Gippsland which is relatively rural and generally populated with small towns surrounded by national parks. This is quite an isolating geography, and these smaller towns are likely to feel the impacts of drought more severely due to their reliance on agriculture and distance from regional centres.

Responses to drought include a combination of on-farm management, town management and government policy. For example, the Gippsland region, until the past decade or so, had not had a severe stock feed issue. On-farm adaptations might include cultivating fodder crops and storage to ensure adequate feed during periods of drought. The difficulty with this is that if farms have not been set up in the past for on-farm storage, on-farm machinery may not suffice for a switch to grow, harvest and store fodder. Switches require investment, which farmers may not be able to fund. Where farmers have been unable to maintain a buffer of funds or feed, they remain particularly vulnerable to the impacts of drought.

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