

# Regional Drought Resilience Plan

Northern New England High Country

October 2024

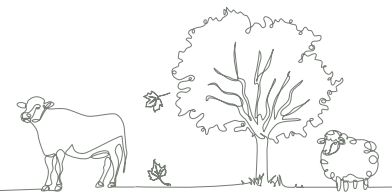


Australian Government  
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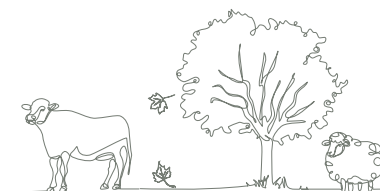
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## Abbreviations

| Term    | Definition                                                                              |
|---------|-----------------------------------------------------------------------------------------|
| ABARES  | Australian Bureau of Agricultural and Resource Economics and Sciences                   |
| ABS     | Australian Bureau of Statistics                                                         |
| BoM     | Bureau of Meteorology                                                                   |
| CDI     | Combined Drought Indicator                                                              |
| CoREM   | Coalition of Renewable Energy Mayors                                                    |
| CSIRO   | Commonwealth Scientific and Industrial Research Organisation                            |
| DAFF    | Department of Agriculture, Fisheries and Forestry                                       |
| DCCEEW  | Department of Climate Change, the Environment, Energy & Water New South Wales (see DPE) |
| DDI     | Drought Direction Index                                                                 |
| DPE     | Department of Planning and Environment (former DPIE and now DCCEEW)                     |
| DRAMP   | Drought Resilience, Adaptation and Management Policy                                    |
| EDI     | Economic Diversity Index                                                                |
| EDIS    | Enhanced Drought Information System                                                     |
| FDF     | Future Drought Fund                                                                     |
| FRRR    | Foundation for Rural and Regional Renewal                                               |
| GBLC    | Granite Borders Landcare Committee                                                      |
| GFC     | Global Financial Crisis                                                                 |
| GLENRAC | Glen Innes Natural Resources Advisory Committee                                         |
| GRDC    | Grains Research and Development Corporation                                             |
| GRP     | Gross Regional Product                                                                  |
| IPCC    | Intergovernmental Panel on Climate Change                                               |
| IRSAD   | Index of Socio-Economic Advantage and Disadvantage                                      |

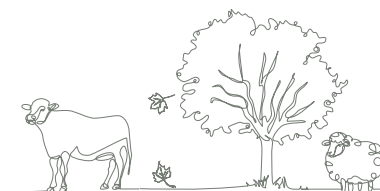
| Term  | Definition                                            |
|-------|-------------------------------------------------------|
| LGA   | Local Government Area                                 |
| LLS   | Local Land Services                                   |
| MEL   | Monitoring Evaluation Learning                        |
| NDA   | National Drought Agreement                            |
| NPWS  | National Park and Wildlife Services                   |
| PCG   | Project Control Group                                 |
| PDI   | Potential Drought Impact                              |
| RAA   | Rural Assistance Authority                            |
| RCP   | Representative Concentration Pathway                  |
| RDRP  | Regional Drought Resilience Plan                      |
| REDS  | Regional Economic Development Strategy                |
| REZ   | Renewable Energy Zone                                 |
| RFCS  | Rural Financial Counselling Service                   |
| RIC   | Regional Investment Corporation                       |
| RIRDC | Rural Industries Research and Development Corporation |
| SEIFA | Socio-economic Indexes for Australia                  |
| SPI   | Standardised Precipitation Index                      |
| SRG   | Stakeholder Reference Group                           |
| SSMI  | Standardised Soil Moisture Index                      |
| WTP   | Water Treatment Plant                                 |
| WUE   | Water Use Efficiency                                  |



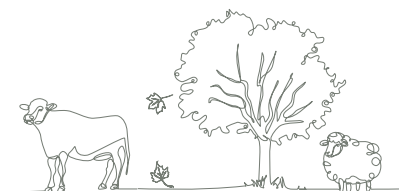
## Key Terms

| Term                | Definition                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Absorptive capacity | The ability of individuals and groups to continue without adapting or changing their behaviour in response to environmental and socioeconomic changes (Béné et. al., 2012).                                                                                                                                                                                                                                                            |
| Adaptation          | Adjustment or modification in natural and/or human systems in response to actual or expected shocks and stresses to moderate harm, reduce vulnerability and/or exploit beneficial opportunities.                                                                                                                                                                                                                                       |
| Adaptive capacity   | The ability of individuals and groups to adjust and respond to environmental and socioeconomic changes.                                                                                                                                                                                                                                                                                                                                |
| Adaptive governance | Co-ordinating iterative, flexible and responsive interactions between systems when designing interventions and for their implementation and evaluation.                                                                                                                                                                                                                                                                                |
| Co-design           | The process of partnership to develop and formulate project delivery and agreed objectives and needs, using participatory methods. A process of working together utilising generative and explorative processes.                                                                                                                                                                                                                       |
| Climate Change      | Global, long-term shifts in average weather conditions, such as becoming warmer, wetter, or drier over several decades or longer.                                                                                                                                                                                                                                                                                                      |
| Drought             | Drought in general means acute water shortage. Drought is a prolonged, abnormally dry period when the amount of available water is insufficient to meet our normal use (BoM, n.d). Drought is complex and multi-dimensional and impacts society, the environment and the economy. There are many types of drought, including meteorological, agricultural, hydrological and socioeconomic. Definitions are provided within the report. |
| Drought declaration | A drought declaration is an acknowledgement by government that an area is affected by poor seasonal conditions. In NSW, droughts are not declared, but other jurisdictions such as Queensland use drought declarations to determine eligibility for drought assistance.                                                                                                                                                                |
| Economic resilience | The ability of the economy to absorb the economic impact of shocks and stresses without changing the economic status or outcomes.                                                                                                                                                                                                                                                                                                      |

| Term                     | Definition                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Environmental resilience | The ability of the natural environment to cope with a diverse range of shocks and stresses while maintaining natural processes and ecosystem services.                                                                                                                                                                                                                                                   |
| Governance               | Governance is the structures and processes by which individuals, groups and agencies in a society share power and make decisions. It can be formally institutionalised, or informal.                                                                                                                                                                                                                     |
| Intervention options     | Alternative or complementary actions, projects, programs, policies, initiatives and investments that are planned to bring about change in the system (Maru et. al., 2018).                                                                                                                                                                                                                               |
| Local knowledge          | Local knowledge and First Nations knowledge incorporates elements of lived experience within a landscape, bearing witness to the operation of systems. It includes aspects of people, landscape, culture – how people interact with surroundings and as part of communities and processes.                                                                                                               |
| Preparation              | Action taken to reduce the impact of an event that occurs and accelerate the recovery period.                                                                                                                                                                                                                                                                                                            |
| Recovery                 | A return to longer term viability.                                                                                                                                                                                                                                                                                                                                                                       |
| Resilience               | The ability of a system to absorb a disturbance and reorganise so as to maintain the existing functions, structure and feedback (Walker et. al., 2004). Also see general resilience, specified resilience, economic resilience, environmental resilience, social resilience, adaptation and transformation. Resilience may also require a change in structure, function and identity to adapt to change. |
| Risk                     | The potential for adverse consequences for human or ecological systems, recognising the diversity of values and objectives associated with such systems (Reisinger et. al, 2020).                                                                                                                                                                                                                        |
| Shock                    | Sudden, short-term events that threaten a city (or region). Examples include major storms, floods, bush fires, heatwaves, disease outbreaks, terrorism and cyber-attacks' (City of Sydney, 2018).                                                                                                                                                                                                        |



| Term              | Definition                                                                                                                                                                                                                       |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Social resilience | The ability of the human society to cope with a diverse range of shocks and stressors while maintaining existing social and community functions.                                                                                 |
| Stressor          | An event that occurs gradually over a timeframe that causes an adverse effect, e.g. drought.                                                                                                                                     |
| Systems           | The interaction of processes, networks and inter-dependencies across a complex 'whole'.                                                                                                                                          |
| Theory of change  | Refers to theories, causal mechanisms and assumptions that explain how and why outcomes and impacts will be achieved through use, implementation and production of proposed inputs, activities and outputs (Maru et. al., 2018). |
| Trends            | Major global or regional influences that have driven change in the past and are expected to shape change into the future.                                                                                                        |
| Threshold         | The point at which a change in a level or amount a controlling variable causes a system to shift to a qualitatively different regime. Also referred to as a tipping point (Folke et. al., 2010).                                 |
| Transformation    | The process of radically changing or building a new system with different structure, functions, feedback and identity (Folke et al., 2010).                                                                                      |
| Trigger point     | A pre-agreed situation or event, that when met, activates a management intervention. Trigger points are usually defined in the planning phase (Wise et. al., 2014).                                                              |



# Acknowledgements

Our Consortium representing Glen Innes Severn Council and Tenterfield Shire Council acknowledge the traditional owners of the land where we live, work and meet – the Ngarabal/Jukembal/Bundjalung/Kamilaroi/Githabul/ Wahlubul people.

We pay our respect to Elders both past and present and extend that respect to all Aboriginal and Torres Strait Islander people who are part of Glen Innes Severn and Tenterfield Local Government Areas.



# A note from the Mayors

We are proud to introduce the Northern New England High Country Regional Drought Resilience Plan (the Plan), a collaborative effort between Glen Innes Severn Council, Tenterfield Shire Council and their respective communities. This initiative was developed in partnership with the Department of Regional NSW and the Commonwealth Scientific and Industrial Research Organisation (CSIRO), with funding from the Australian and NSW Governments under the Future Drought Fund (FDF). We are grateful for the support this funding has provided to our communities.

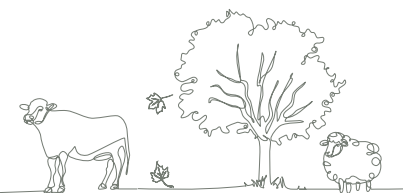
Our region has faced significant challenges due to recent droughts, highlighting the need for better preparedness and resilience. While the strength and determination of our people have been commendable, the changing climate requires us to be proactive in addressing future drought impacts. The feedback from our community and stakeholders underscored the importance of a coordinated and strategic approach to drought planning and preparedness, extending beyond the farm gate to encompass the broader economy and community well-being.

The Plan is designed to help our communities understand and prepare for drought, with the goal of building greater resilience. It recognises that the impacts of drought ripple through every sector, affecting businesses, tourism, and community services. We are committed to working alongside residents, community groups, local businesses, and all levels of government to implement this Plan. By uniting our efforts, we can support a stronger and more resilient future for our region.

The Plan is our region's first comprehensive drought resilience strategy. It outlines planning and preparations to mitigate the impacts of future droughts on our livelihoods and the broader economy while offering a roadmap for drought planning, response and recovery through initiatives to strengthen our region's resilience. Thanks to all community members who contributed to and engaged with this Plan.

The Plan makes key recommendations to enhance our local capacity to respond to drought and support those affected. It also identifies areas for further research on the localised impacts of drought and encourages local organisations to share knowledge, support mental health and promote water-saving practices. As funding becomes available, we will begin implementing the recommendations.

This is the start of a transformative journey for our region. We must embrace new ways of thinking and be willing to explore innovative solutions. We invite everyone in the Glen Innes Severn and Tenterfield Local Government Areas (LGA) to join us on the journey to create a resilient, sustainable future for our communities.



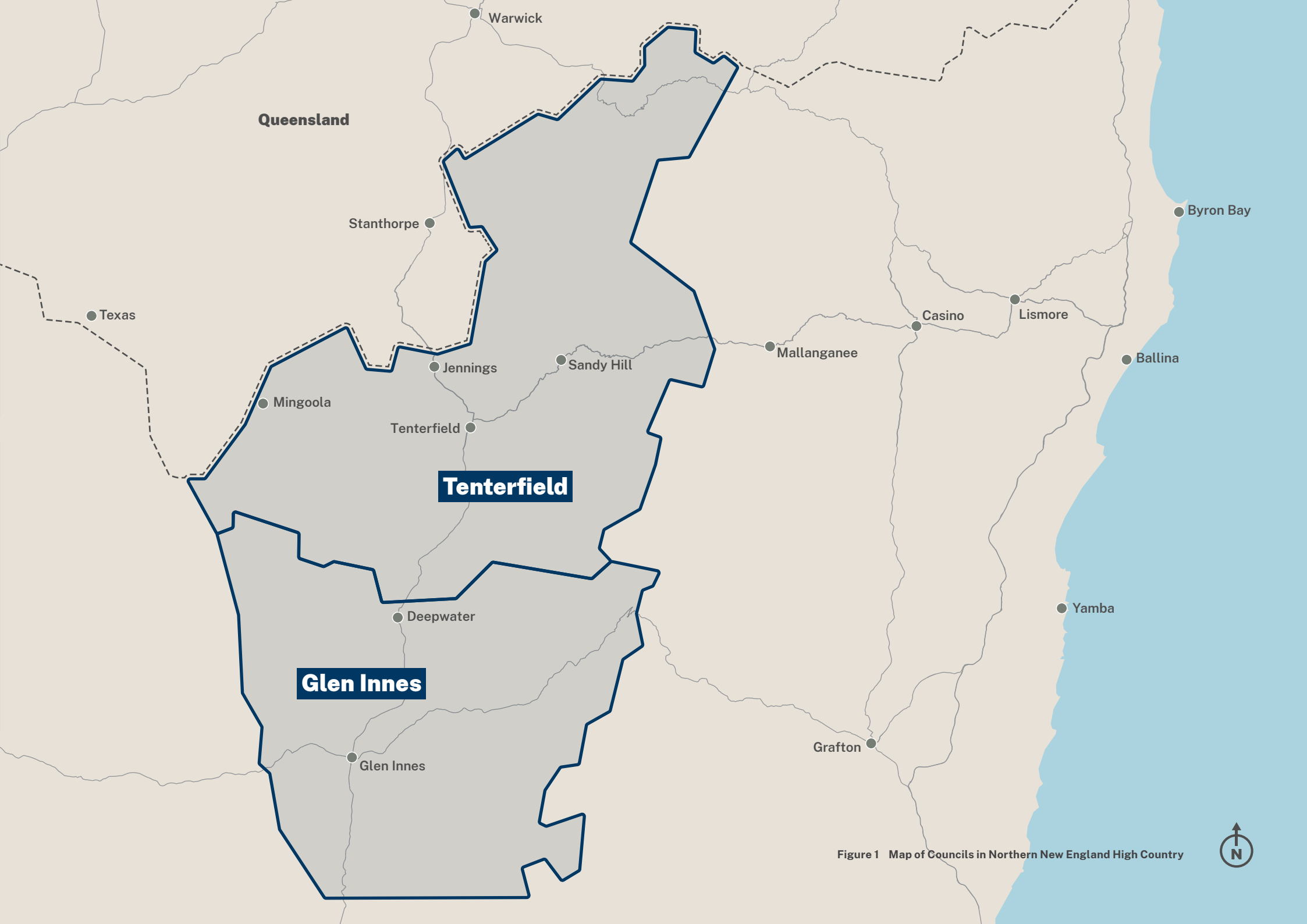


Figure 1 Map of Councils in Northern New England High Country

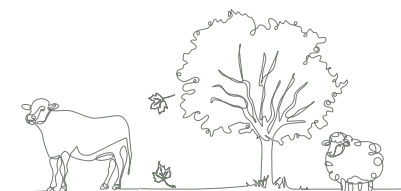


# Quick Guide



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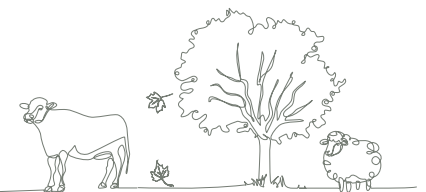
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# 01

## Drought resilience



# 1. Drought resilience

## 1.1. Vision

Throughout the consultation for this Plan a vision was developed to define the aspirations of the region to increase its resilience to drought. The vision was created and tested throughout the consultation with the stakeholder reference groups for each Local Government Area (LGA) and the Project Control Group (PCG).

***Our vision is a Northern New England High Country community that is resilient to drought through being connected, having a strong social fabric, grounded in tradition and adaptive to change. A region that balances prosperity and environmental stewardship to maintain and develop a strong community and diverse economy for future generations.***

## 1.2. Plan background

Drought is expected to continue impacting the Glen Innes Severn and Tenterfield LGAs and indeed worsen in-line with forecasts of climate change bringing longer, hotter, drier seasons with water shortages and increased fire risks. Successive drought policies and agreements have emphasised long-term preparedness, sustainability, resilience, and risk management (DAFF, 2002). In December 2018, the Council of Australian Governments signed a National Drought Agreement (NDA). The NDA is a collaborative effort among federal, state and territory governments to coordinate drought response, focusing on preparedness, response, and recovery. It aims to support farming businesses and communities in managing climate change impacts by enhancing risk management practices and resilience.

In NSW, the NSW Department of Primary Industries and Regional Development (DPIRD), Rural Assistance Authority (RAA), and Local Land Services (LLS) manage state-level drought support, while the federal agencies responsible are the Department of Agriculture, Fisheries and Forestry (DAFF), and the Regional Investment Corporation (RIC). These agencies collaborate to provide financial assistance, resources, and support to those affected by drought.

Our regional Councils recognise the importance of preparing for and developing a robust community in good times to lessen the impact of drought and accelerate the recovery period. Previous drought impact response has focused on primary producer operations through Federal and State assistance. This plan primarily looks beyond the farmgate and how the whole community can benefit from working together to strengthen resilience.

The purpose of the Northern New England High Country Regional Drought Resilience Plan (the Plan) is to help support the region to better plan for, and become more resilient to, the impacts of drought over time. Resilience is important in rural and regional communities. It reinforces the connectedness of community members and their ability to manage varying seasons that create uncertainty and challenges to their businesses and way of life. The Plan has been designed with the Councils and their communities in a collaborative, partnership drawing on the experience and input of those who live and work in the region.

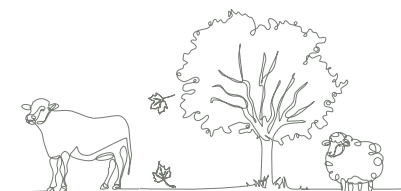
This Plan provides an opportunity to identify actions that will help the region build economic, environmental and social resilience, supporting communities in future droughts. The most effective response to rising uncertainty is to plan for greater drought resilience. This can be achieved by building sustainable and diverse regional economies, reducing the vulnerability of communities to changing economic conditions and accelerating recovery, as well as enhancing thriving natural environments.

The Commonwealth Government's Future Drought Fund (FDF) seeks to build drought resilience in our agricultural sector, landscapes and communities. The intent of its eight interrelated foundational programs is to have an innovative and profitable farming sector, a sustainable natural environment and adaptable rural, regional and remote communities, all with increased resilience to the impacts of drought and climate change (DAFF, 2023).

The FDF is intended to deliver against three inter-connected strategic priorities:

- Economic resilience for an innovative and profitable agricultural sector
- Environmental resilience for sustainable and improved functioning of farming landscapes
- Social resilience for resourceful and adaptable communities.

Implementation funding will be available across Australia under the Commonwealth Government's FDF.



### 1.2.1. Place-based resilience activities

The 2022–2023 Annual Report for the National Drought Agreement outlines that assistance and funding should be identified through a greater level of community-driven, place-based resilience activities. This reflects the growing recognition that communities are best able to self-identify what actions or skill sets they need to increase their resilience to drought (DAFF, 2023).

Many NSW communities have faced successive droughts and natural disasters, these communities also continue to face complex demographic, social and economic realities, as some of the most disadvantaged council areas in NSW. This means local, state, and federal governments need to design and deliver bespoke approaches to service delivery (DRNSW, 2022).

In November 2022, the NSW Government released a refreshed Vision for Regional NSW. 'Our Vision for Regional Communities' sets out the next wave of priorities – and is backed by a targeted plan to bring them to life. The Plan focuses on how the NSW Government is planning for the next generation and beyond, with the intention to build strong communities that have the skills, knowledge, infrastructure, and quality local services. This also includes building resilient communities with the capacity to withstand times of economic and social hardship and shocks like drought by working with local communities to make life better across regional NSW (NSW Government, 2022).

In February 2024, the new Drought Resilience Funding Plan 2024 – 2028 came into effect. This Funding Plan provides a principles-based framework to guide all FDF spending. To support the Funding Plan, a Future Drought Fund Investment Strategy (2024 to 2028) will be released in late-2024, to provide a detailed 4-year plan for drought resilience investments under the fund. Implementation funding will be available for approved plans under the Australian Government's FDF.

### 1.3. Key inputs to the Plan

The following documents were considered through the development of this Plan and incorporated into the stakeholder engagement activities.

- Glen Innes Severn Council: Drought Management Plan
- Tenterfield Shire Council: Drought Management Plan
- Other regional documents including:
  - Council strategic planning documents
  - Local economic development strategies
  - NSW Water Strategy
  - Border Rivers Regional Water Strategy (2022)
- Department of Regional NSW (2022) Our Vision for Regional Communities
- Australian Government Department of Agriculture, Water and the Environment (2021) New England and North West New South Wales
- Resilience Principles: Infrastructure Australia's approach to resilience
- New England North West Regional Plan 2041
- QLD Government: Investment Logic Mapping Guide
- Drought Resilience, Adaptation and Management Policy (DRAMP) Framework 2018
- CSIRO Drought Resilience mission (2022)
- Publications including Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES), CSIRO, Rural Industries Research and Development Corporation (RIRDC), Grains Research and Development Corporation (GRDC) and others.

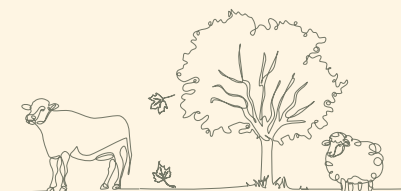
Additionally, contributions from a broad range of community and stakeholders - including community organisations, First Nations, businesses, service industries, producers and volunteers – were instrumental in the co-design of this Plan.

It is intended for this Plan to be a living document and to be considered and factored into a range of other plans and strategies by local government, state government, non-government organisations, not-for-profits, businesses and others.

### 1.4. A Plan for drought resilience

Of all climate and weather-related conditions affecting Australia, drought is often the most challenging, with the Glen Innes and Tenterfield LGAs being prone to periods of persistent drought with low rainfall and streamflow being well documented. When it comes to drought, "our best defence against the shocks of drought is to prepare. Planning for greater drought resilience across all aspects of regional and remote communities, not just for primary producers, will have the greatest impact. Resilience can be achieved by building sustainable and diverse regional economies, reducing the vulnerability of communities to changing economic conditions, accelerating recovery, and enhancing the natural environment" (DRNSW, 2022).

Drought is a defining feature of Australia's climate cycle – largely due to our continent spanning the latitudes of the subtropical high-pressure belt. This is an area of sinking, dry, stable air and usually clear skies. The far north and south of the country come under the influence of reasonably regular rain-bearing systems for at least part of the year. The east coast is normally well watered from weather driven by the Tasman and Coral Seas. However, over most of the country rainfall is low and erratic. Even in the wetter areas, very dry years can disrupt normal activities and lead to water shortages (BoM, n.d.).



As such, droughts will come again, and they are anticipated to get worse in parts of the country as a result of a changing climate. Droughts are challenging times, not just for each farm, but beyond the farm gate for entire communities and regions. The toll taken on regions and their communities has been enormous and the impacts often linger for decades. The most effective response to rising uncertainty is to plan for greater drought resilience.

## 1.5. Drought resilience framework

### 1.5.1. Defining resilience

The United Nations General Assembly defines resilience as: The ability of a system, community or society that is exposed to hazards to resist, absorb, accommodate, and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions (DPIE, 2021). However, it is important that the system maintains options to develop and remains open to transformative and non-linear change (Nelson, 2011).

### 1.5.2. Resilience capacity

Absorptive capacity is often described in traditional resilience terms as the ability to absorb shocks or to 'bounce-back' (Haider and Cleaver, 2023). Adaptive capacity is often the next step on the resilience journey and entails having the necessary resources to learn and adapt the system (Haider and Cleaver, 2023). However, it is increasingly being recognised that adaptation is insufficient to deal with large-scale environmental issues like climate change. Transformation, which is the shift to a new system including change in priorities and leading to changes across multiple scales, is sometimes the best way to deal with large scale issues. However, transformation is not always needed or 'good' and in certain circumstances, adaptation is the best course of

action (Haider and Cleaver, 2023). These three concepts are used in Section 5 to indicate how the proposed resilience action may contribute to resilience building in the region.

Resilience thinking incorporates the notions of absorption, adaptation, and transformation into a unified approach (Figure 2). It offers a structured framework for developing strategies aimed at enhancing resilience (Folke et. al., 2010). These different capacities are vital components of building resilience, and this holistic perspective acknowledges resilience is not a one-size-fits-all concept and tailored approaches are necessary to address the diverse and dynamic challenges communities, ecosystems, and organisations / businesses face.

### Resilience thinking

Resilience thinking investigates how multiple systems, including people and environmental systems, can still operate when there are disruptions and uncertainty (Stockholm Resilience Centre, n.d.). It offers a structured framework and principles for developing plans and strategies aimed at enhancing resilience across all levels, from national, regional and local (Folke et. al., 2010; Greet et al., 2021). Creating a resilient community demands there to be an awareness of the nature of disasters in the region, acknowledge where the community is vulnerable to allow for growth, and not be afraid to probe the boundaries of a resilience system (Greet et al., 2021).

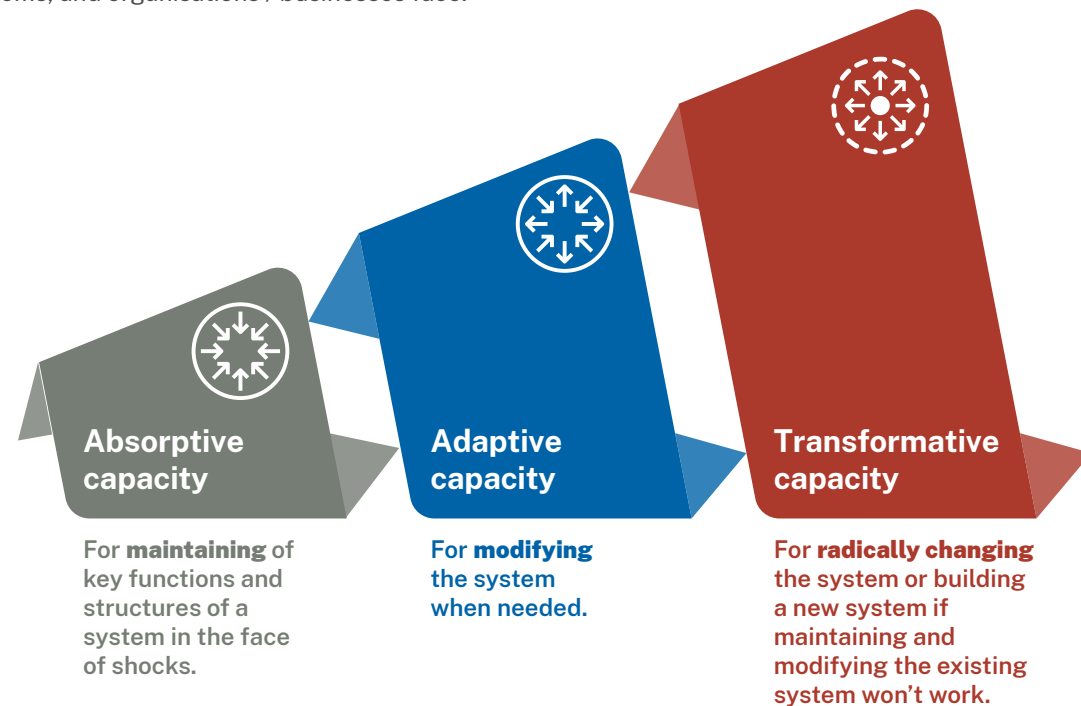
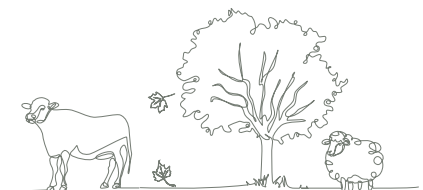


Figure 2 The Resilience Framework applied in this Plan



## Resilience assessment

ABARES developed a national index to rank rural or regional communities by their potential to be adversely affected by drought (ABARES, 2022a). As shown in Figure 3, this index combines drought exposure and drought sensitivity (at the farm enterprise level), and data representing community sensitivity (agricultural dependence of a community), to initially produce an index of ‘Potential drought impact’ (PDI). This PDI index can be applied consistently across LGAs. Whether the PDI will cause lasting loss or harm depends on the community’s adaptive capacity (ABARES, 2022a). The project is ongoing, and the next step is to include indicators of potential adaptive capacity of communities, to better understand the likely resilience of a community to drought (ABARES, 2022a). Consequently, the output of the framework would be a measure of drought vulnerability and resilience, describing the degree to which Australian agriculturally dependent communities are likely to be adversely affected by a drought and their ability to withstand those impacts.

Within the Farm Sensitivity measure there is drought exposure and drought sensitivity. Drought exposure represents the amount of external stress farm enterprises experience due to the climate variability they are exposed to at their location (ABARES, 2022a). Drought sensitivity represents the effects that climate variability has on farm outcomes, reflecting the responsiveness of farm production systems to short-term climate variability and short-term management responses (ABARES, 2022a). Currently, only broadacre farms are represented by this indicator.

The Community Sensitivity measure represents the reliance of a LGA on employment in agricultural production industries (broadacre and irrigated) and related downstream food and beverage manufacturing (for example, meat processing, dairy product

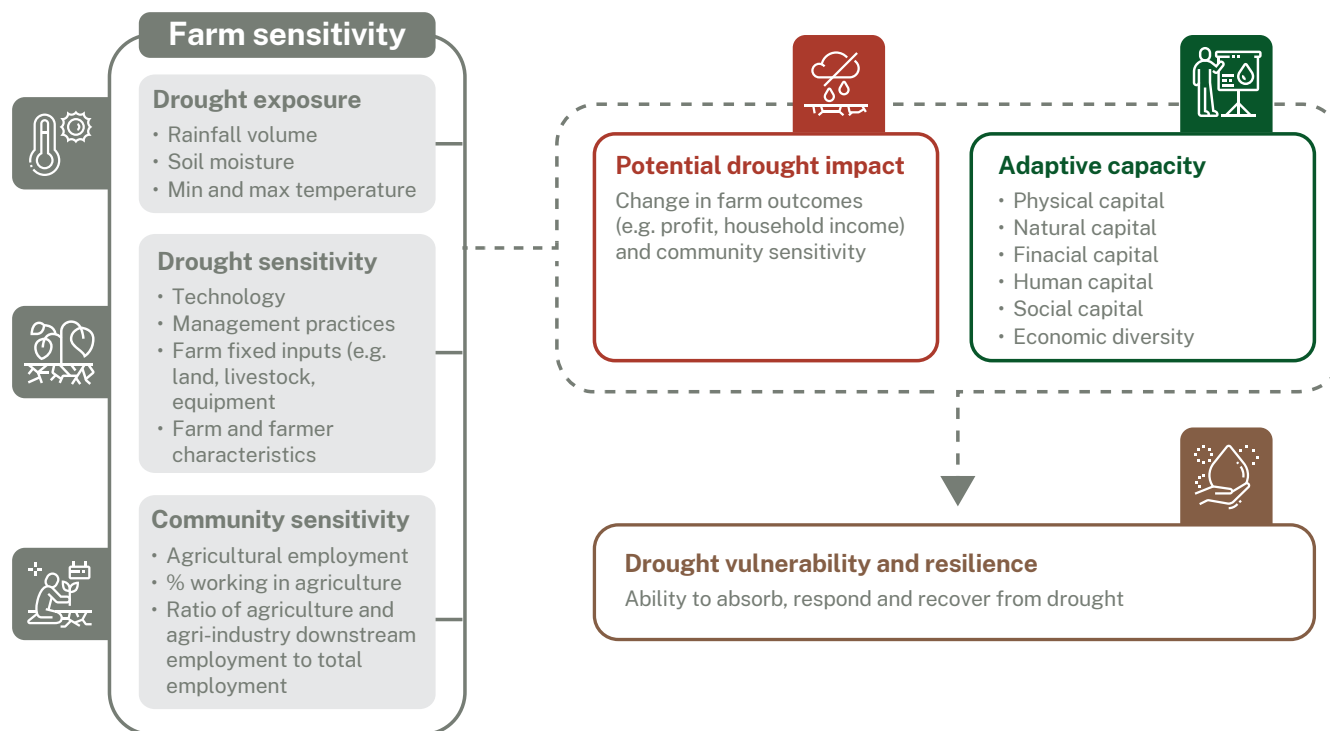
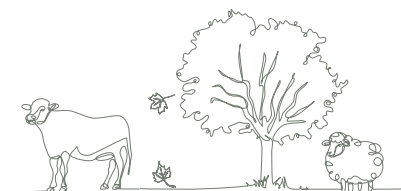


Figure 3 National Index (adapted from ABARES 2022)

manufacturing and fruit and vegetable processing) (ABARES, 2022a). Community Sensitivity is measured as the proportion of people employed in those agri-industries compared to total employment in the LGA. The PDI index highlights the need for drought resilience plans to consider the risk and exposure of a region to drought (such as considering the PDI ranking) and how that can be minimised, as well as how a community can build in adaptive capacity to manage the impact of droughts (overall drought vulnerability and resilience).

While the adaptive capacity measure is yet to be fully developed, the economic diversity index (EDI), which is a sub-component of adaptive capacity, has been calculated for all LGAs. “The EDI reflects the composition of the local economy across all industry of employment sectors compared to the Australian economy” (ABARES, 2022a). The EDI scale ranges from zero (0) to one (1) and a score closer to one (1) indicates that the LGA has an employment composition



resembling that of Australia (ABARES, 2022a). A low EDI score, therefore, represents a less diverse economy (ABARES, 2022a). This index also correlates with population density and access to services, as communities that exhibit the highest levels of economic diversity are usually the larger population centres (ABARES, 2022a).

The ABARES technical report (2022) lists five forms of capital, or resources, which are positively related to the community’s ability to manage or cope with impacts. These are:

- human capital – labour and influences on the productivity of labour, including education, skills and health
- social capital – claims on others by virtue of social relationship
- natural capital – land, water, and biological resources
- physical capital – produced by economic activity, including infrastructure, equipment and technology
- financial capital – savings and credit.

A Tableau© dashboard generates a (0 to 1) PDI ranking of agriculturally dependent communities based on their potential to be impacted by drought. The most sensitive LGAs (with both high farm sensitivity and high agricultural dependence/ community sensitivity) receive a ranking near 1 and the least (with both low farm drought risk and low agricultural dependence) receive a rating near 0 (ABARES, 2022a).

Table 1 below provides the data contained in the Tableau© dashboard as well as including the Index of Socio-Economic Advantage and Disadvantage (IRSAD). The IRSAD is one of the socio-economic indexes for Australia (SEIFA). The IRSAD summarises information about the economic and social conditions of people and households. SEIFA indexes orders areas from lowest to highest, with decile 1 representing the most disadvantaged areas relative to other areas, and 10 representing the most advantaged areas.

Table 1 shows that both LGAs in this Study are at the lower end of the SEIFA decile with a value of 2.

As mentioned above, the PDI is determined as a function of farm exposure (drought exposure and drought sensitivity at farm enterprise level) and community sensitivity. In this way, the PDI does not capture the actual degree or level of potential drought impact, but rather an LGA's relative ranking of potential drought impact against other LGAs.

When considering these factors, both LGAs demonstrate a low-medium economic diversity, very low farm sensitivity, and low community sensitivity in comparison with other regions, meaning a low potential for drought impact. Based on this socio-economic analysis the region already has a strong degree of resilience for drought and can further maintain and further strengthen its resilience.

| Local Government Area (LGA) | Economic Diversity (Ranges from 0-1)* | Farm Sensitivity (FS) (Ranges from 0-1)* | Community Sensitivity CS (Ranges from 0-1)* | Potential Drought Impact (Ranges from 0-1)* | Socio-economic advantage / disadvantage (SEIFA decile) (Ranges from 0-10)** |
|-----------------------------|---------------------------------------|------------------------------------------|---------------------------------------------|---------------------------------------------|-----------------------------------------------------------------------------|
| Glen Innes Severn           | 0.44                                  | 0.0                                      | 0.29                                        | 0.20                                        | 2                                                                           |
| Tenterfield                 | 0.37                                  | N/A                                      | 0.33                                        | 0.22                                        | 2                                                                           |

\* Source: ABARES, 2022b \*\*Source: ABS, 2021b

Table 1 Drought indicator framework outputs and SEIFA decile by LGA



Shocks and stresses

Shocks and stressors need to be considered in resilience assessment. Figure 4 describes episodic and chronic stressors.

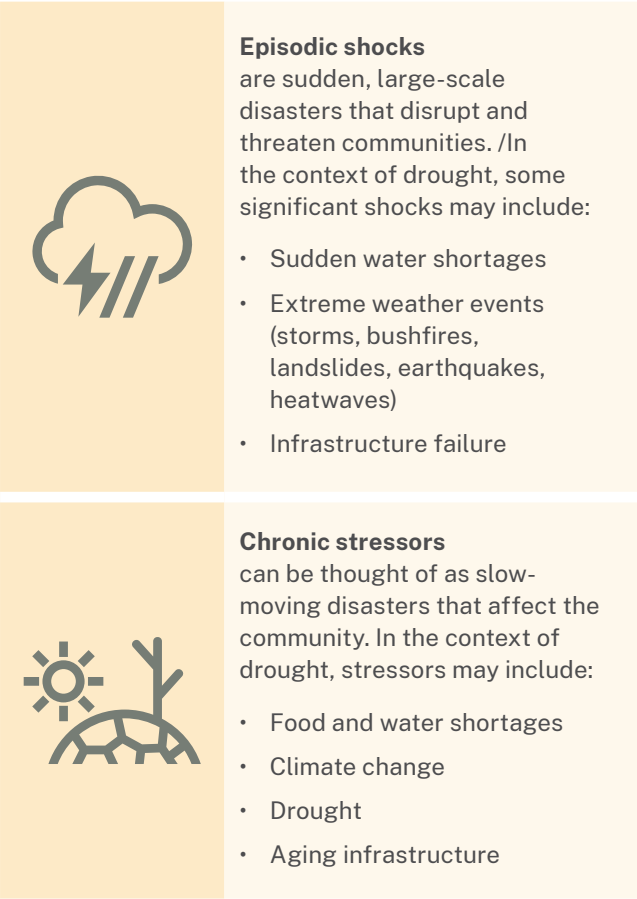
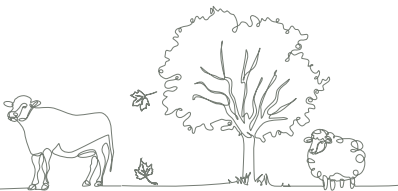
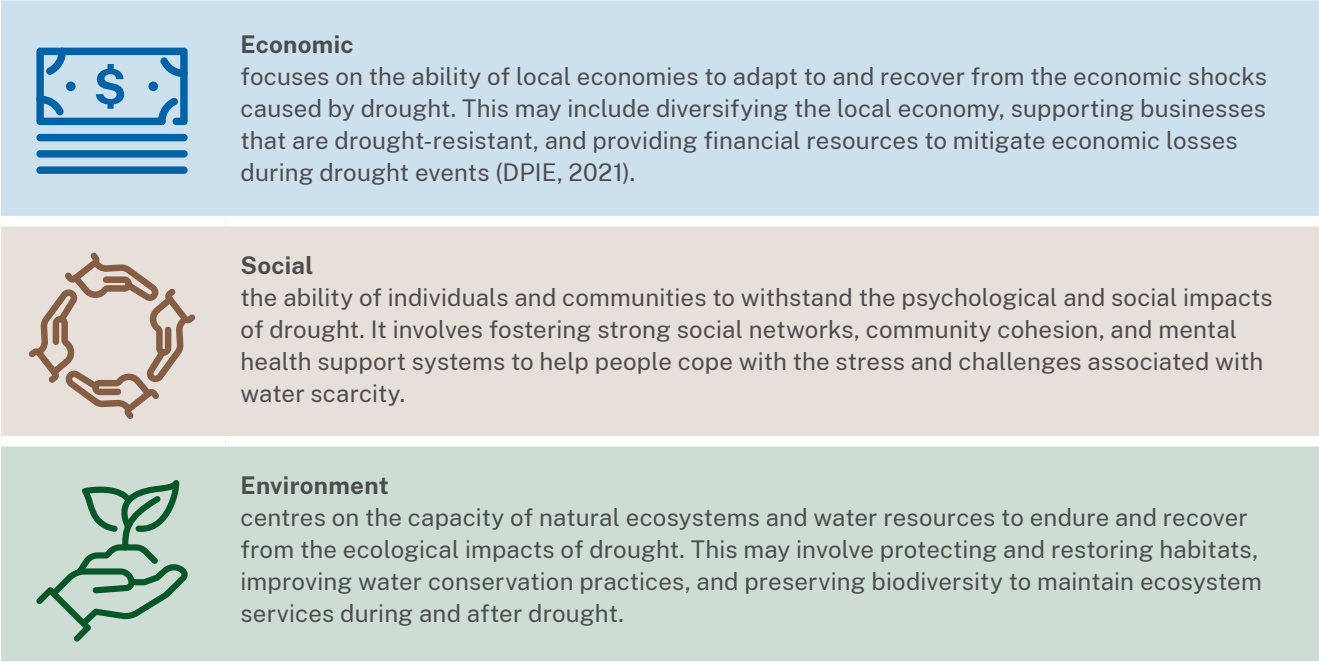


Figure 4 Shocks and stressors

Types of resilience

To establish a holistic approach towards resilience, a broad range of systems must be considered, including social resilience, economic resilience and environmental resilience.



# 1.6. Drought Resilience at a glance

The journey for developing this Plan for Glen Innes Severn Council and Tenterfield Shire Council is illustrated in Figure 5. The process recognises communities of the two LGAs have been previously consulted about drought, this Plan builds on this feedback. Figure 6 provides a graphical representation of insights previously gathered on the topics of drought and enhancing resilience from these communities. It captures the voices, ideas, and aspirations expressed by the residents and stakeholders who live, work, and form these communities.

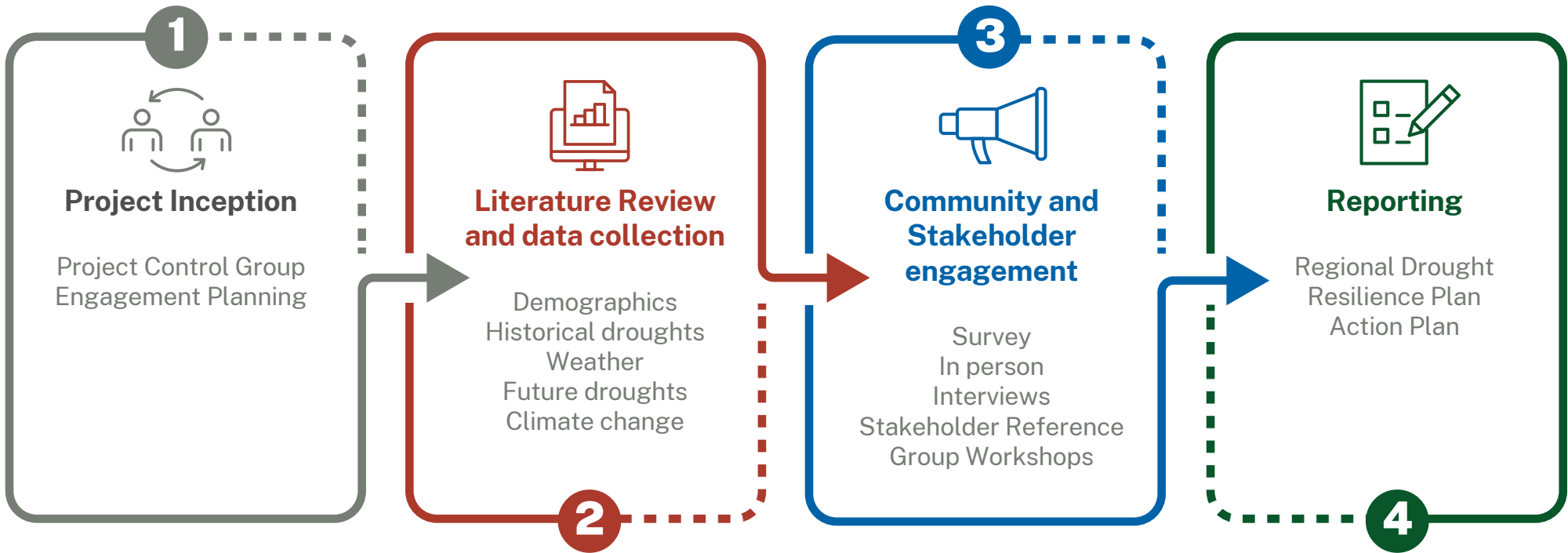
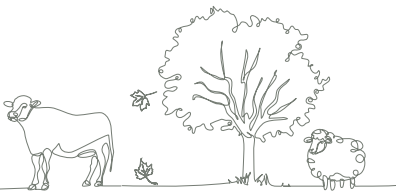


Figure 5 The Drought Resilience Journey



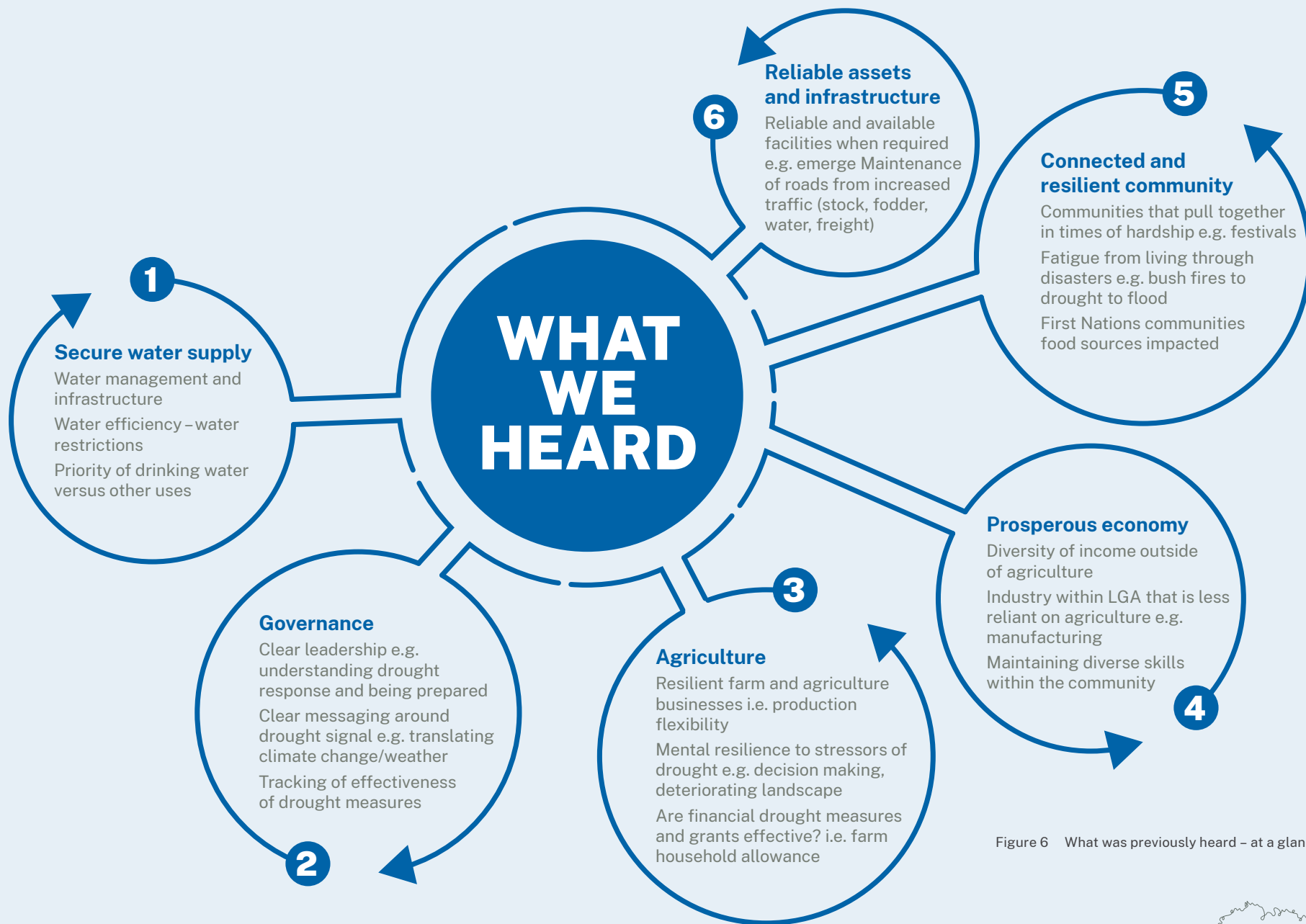
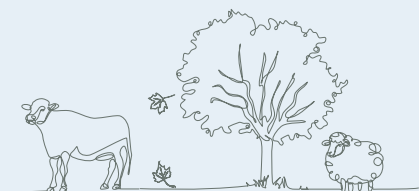


Figure 6 What was previously heard – at a glance



# 1.7. Development of the Plan

This Plan was developed through a three phased approach, focussed on community-led development of themes, vision and actions.

Phase 1: Understanding the community profile, what is known about drought in the region, the lessons learnt and the region’s greatest risks

Phase 1 involved the formation of a Project Control Group (PCG) which consisted of members of the two councils, Department of Regional NSW, and consultants. The PCG provided inputs and guided the development of the Plan. They also assisted with arrangements for community and stakeholder engagement activities.

This phase of the project also included a review of literature to better understand the community profile, what we currently know about drought in the region, the lessons learnt from previous droughts and where the greatest risks lie. The literature review informed future phases of the project including identification of plan themes and ensures the Plan is built on past work and programs. This also included looking at resilience frameworks and pulling together ideas for what may be most relevant to the region, to test with the stakeholder groups.

Phase 2: Community and stakeholder engagement to identify, test and understand the regional opportunities

Phase 2 comprised the delivery of the engagement approach. A review of documentation from Glen Innes Severn Council and Tenterfield Shire Council resulted in the development of five key themes (See Figure 7).

The themes were originally formed and used for categorising and analysing the actions and initiatives identified during the Phase 1 review and in the series of resilience workshops Stakeholder Reference Group (SRG) meetings). These themes were tested and refined through the SRGs to make sure they were a sound representation of the regions key areas of focus and were developed in line with councils’ Community Strategic Plans.

Community engagement was designed with the communities’ diverse needs and perspectives in mind. Engagement allowed people to express information in their own words so local voices and needs were highlighted. The engagement combined in-person and digital methods, ensuring inclusivity and transparency. An overview of engagement activities can be seen in Figure 8. It should be noted the region is suffering some engagement fatigue and targeted interviews and the SRG meetings were the most engaging.



Figure 7 Five key themes of the Plan



Engagement activities

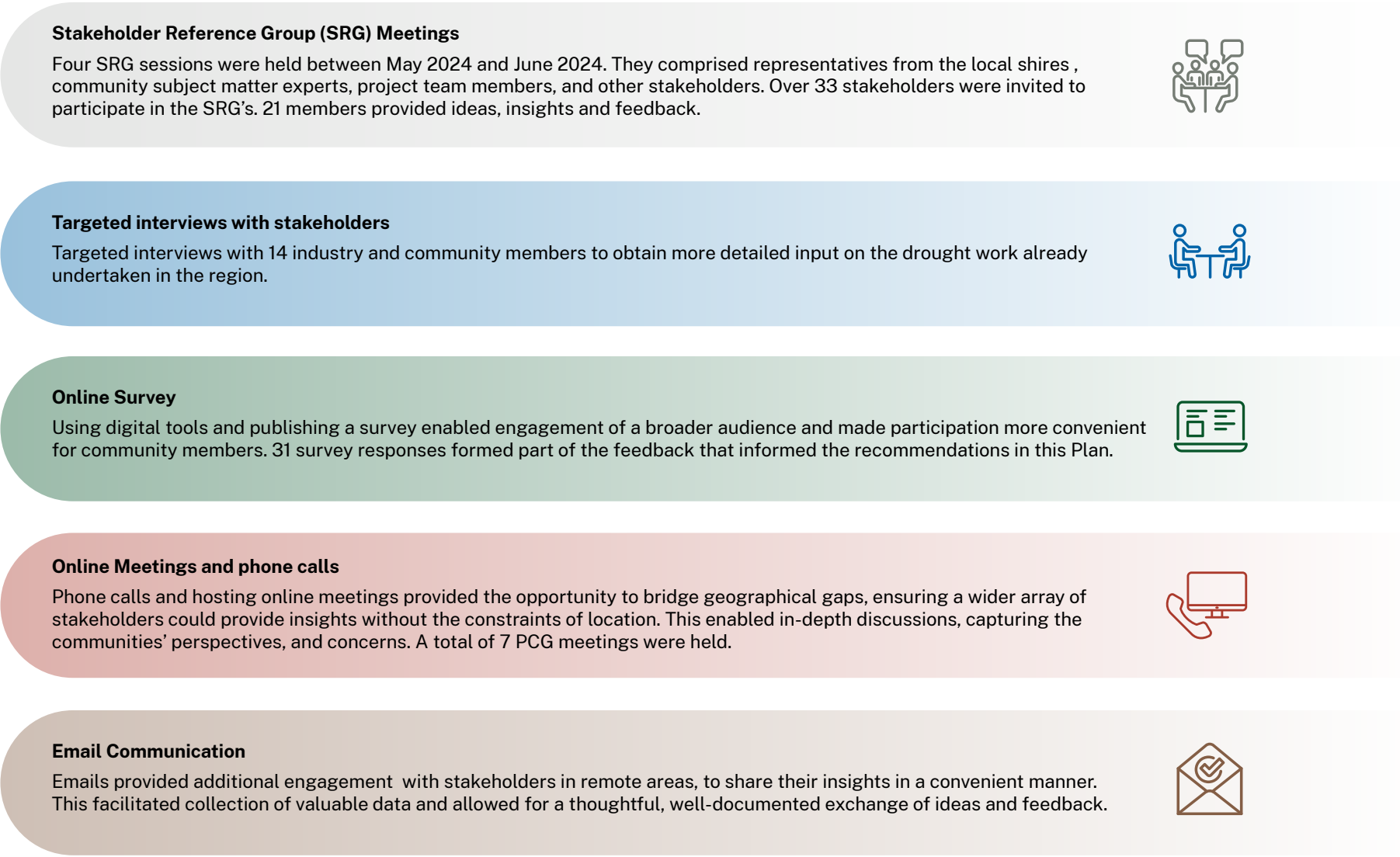


Figure 8 Engagement activities



Phase 3: Prioritise and develop the Plan

Phase 3 consisted of prioritising the opportunities (through the SRG and PCG) and documenting each in this Plan. These opportunities were organised using the thematic framework shown in Figure 9. The Plan identifies actions that can be progressed to hopefully improve outcomes for the community. These have been built on in this Plan to improve the region’s drought resilience. The PCG provided final review of the Plan before it was sent to CSIRO for review. The PCG was also involved in the final updates before the Plan was released to the public.

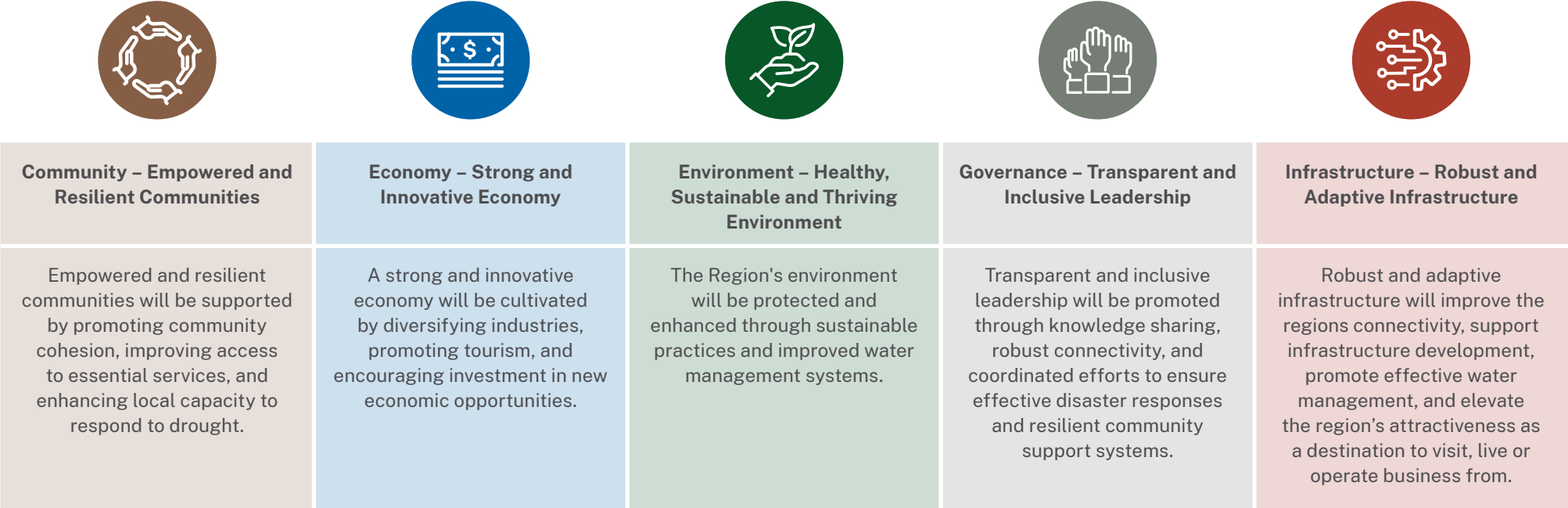
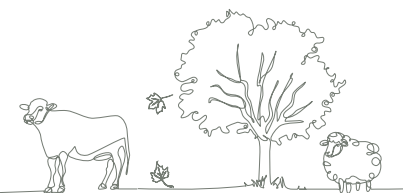


Figure 9 Detailed five key themes of the Plan



# 02

## Region and communities





## 2. Region and communities

### 2.1. Introduction to the region

Glen Innes Severn and Tenterfield LGAs are located in the Northern New England High Country Region, approximately 660 kilometres north of Sydney and 270 kilometres south of Brisbane. Both LGAs encompass a total of 12,821 square kilometres with a total combined population of 15,741 (ABS, 2022). Glen Innes and Tenterfield are the largest towns in their respective LGAs and offer the majority of essential services and facilities including business, health, education and culture.

The river systems, wetlands and creeks located within these LGAs perform many roles in the wellbeing and prosperity of these communities. Some aspects of importance include cultural significance to the First Nations Peoples, water resource for agriculture, tourist attractions, recreational hubs, ecological vitality and long-term water security. Prominent First Nations Peoples within the two LGAs are the Ngorabul and Jukemba Peoples with strong connections to country for over 60,000 years and making up 7.5% of the region's population (ABS, 2022).

Both the Glen Innes Severn and Tenterfield LGAs have important ecological and culturally significant landscapes and heritage. Both LGAs have strong, well established agricultural sectors, with opportunities for diversification, value-adding and identification of new markets. The region's strategic location and proximity to South-East Queensland and North-West NSW offers stability and opportunity for growth. While agriculture has the highest level of employment across the region, health care and social assistance, construction, and public administration and safety also play important roles in the region's employment (ABS, 2022).

The Index of Relative Socio-Economic Advantage and Disadvantage (IRSAD) summarises data points about the economic and social conditions of people and households into decile groups of 1 through 10. Both LGAs scored within decile 1 within NSW, indicating the highest level of disadvantage (ABS, 2021b). Further relevant demographic information is provided in the following section as well as in Figure 10 and Figure 11.



Largest economic sector being agriculture (including forestry) with an estimated output of **\$119.6** million in Glen Innes and **\$76.4** million in Tenterfield



In 2021/22 the main agricultural production was in both Glen Innes and Tenterfield was **livestock production**, and **broadacre crops**

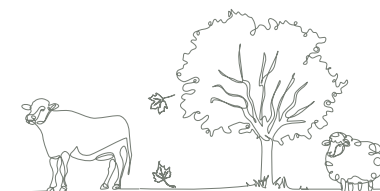


Pastures for grazing and feed was the largest user of irrigated water in Glen Innes at **84%**



Fruit trees, nut trees, plantation and berry fruits was the largest user of irrigated water in Tenterfield at **32.8%**

Source: (ABS, 2021a)



### 2.1.1. Glen Innes Severn LGA

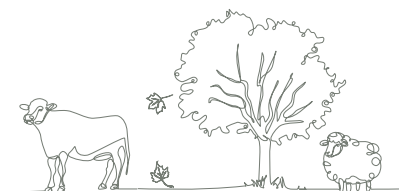
Glen Innes Severn is located near the crest of the Great Dividing Range in the New England High Country. The area is bordered by Tenterfield to the north, Armidale to the south, and Clarence Valley to the east and lies in the Gwydir River catchment.

Housing type within the LGA is dominated by separate dwellings (92.3%) which was higher compared to NSW (65.6%). Glen Innes Severn LGA also had a lower weekly median rent (\$220 per week) in 2021 compared to NSW (\$420 per week) (ABS, 2022). According to the Rental Affordability Index (RAI), renting in the LGA is considered 'affordable' compared to other parts of NSW, specifically coastal areas (SGS Economics & Planning, 2024). In addition, Glen Innes Severn LGA had a lower occupancy rate compared to NSW, which could indicate a lower demand for housing and lower rental rates in the region (ABS, 2022).

There are two major highways in Glen Innes Severn LGA, with the New England Highway providing north-south connectivity, and the Gwydir Highway providing east-west connectivity. The New England Highway provides links north towards Queensland, and south to Tamworth. The Gwydir Highway links coastal regions of Coffs Harbour in the east and Moree in the west. Armidale Regional Airport is located an hour south of Glen Innes and offers daily flights to and from Sydney and Brisbane. Regional coaches connect Glen Innes to Armidale and Tenterfield daily, with trips three days a week to Inverell, Moree and Grafton. According to the 2021 Census, the majority of commuters (64.7%) travelled to work via car, as a driver or passenger, while 0.1% commuted via public transport (ABS, 2022).

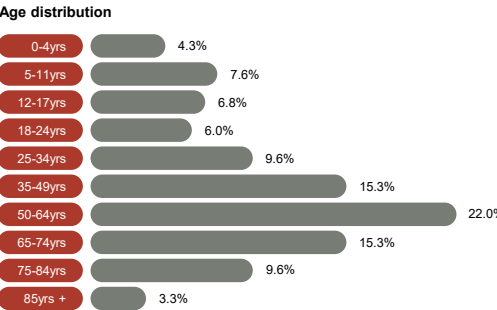
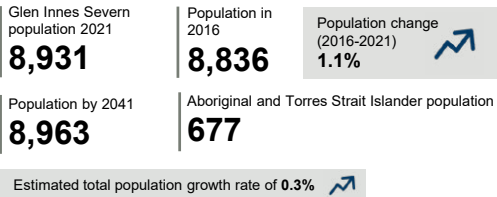
The population of Glen Innes Severn LGA is concentrated in the localities of Glen Innes, Emmaville and Deepwater. The majority of services are located in the town centre of Glen Innes, situated at the intersection of the New England and Gwydir Highways. Grey Street is the regions central shopping hub and includes a number of restaurants, cafes, a supermarket, retail and boutique shops, specialty stores, hair salons, pharmacies, fitness centre and public library. Other key businesses, services and facilities located in Glen Innes Severn LGA include:

- Shops and businesses: over 35 restaurants and takeaway shops, 12 cafes, three supermarkets, four hair salons, and a brewery.
- Community services and facilities: over 40 sporting clubs including an equestrian park, indoor sports centre, two aquatic centres, five sporting ovals, 15 parks, two nature reserves, skate park, bowling greens and golf courses. There are also various youth services, six aged care services, three medical centres and an art gallery.
- Accommodation: 28 boutique hotels and apartments, 22 campgrounds and caravan parks, three farm stays and 14 hotels and motels.
- Education: seven government primary schools, one non-government primary school, two high schools, TAFE NSW Glen Innes Connected Learning Centre (CLC), New England Community College, and UNE Glen Innes Study Centre.
- Emergency services: two hospitals, an Ambulance Service of NSW station, one fire station, 14 rural fire services, three police stations and two NSW SES units.

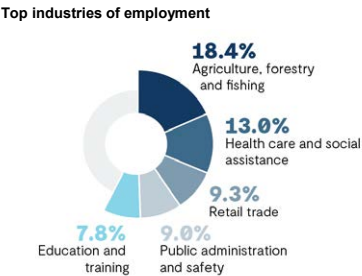


# Glen Innes Severn LGA

## Population characteristics



## Work and economy



|                     |                                   |                               |
|---------------------|-----------------------------------|-------------------------------|
| <b>Unemployment</b> | <b>Labour force participation</b> | <b>Journey to work by car</b> |
| Glen Innes 6.4%     | Glen Innes 47.1%                  | Glen Innes 64.7%              |
| NSW 4.9%            | NSW 58.7%                         | NSW 46.6%                     |

|                                 |                                |
|---------------------------------|--------------------------------|
| <b>Median individual income</b> | <b>Median household income</b> |
| Glen Innes \$528                | Glen Innes \$934               |
| NSW \$813                       | NSW \$1,829                    |

|                   |                     |
|-------------------|---------------------|
| <b>Median age</b> | Glen Innes 50 years |
| NSW               | 39 years            |

|                      |                 |
|----------------------|-----------------|
| <b>Born overseas</b> | Glen Innes 7.4% |
| NSW                  | 29.3%           |

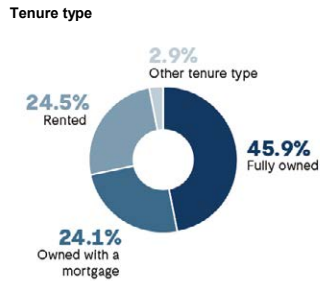
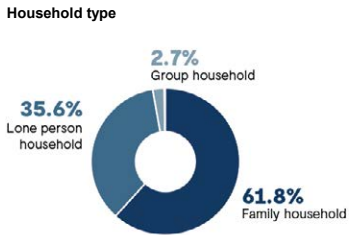
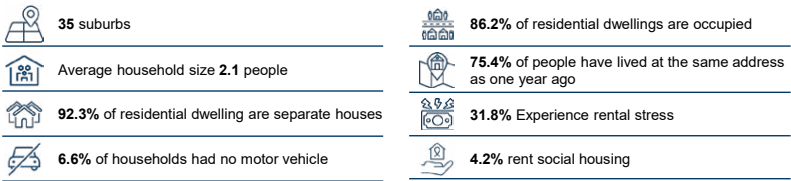
|                                             |                 |
|---------------------------------------------|-----------------|
| <b>Speaks a language other than English</b> | Glen Innes 2.3% |
| NSW                                         | 26.6%           |

With the top 3 most spoken language other than English in Glen Innes including:

- » Nepali – 0.4%
- » Malayalam – 0.3%
- » Mandarin – 0.1%

|                                                |                 |
|------------------------------------------------|-----------------|
| <b>Require assistance with core activities</b> | Glen Innes 3.9% |
| NSW                                            | 2.7%            |

## Family and dwelling characteristics

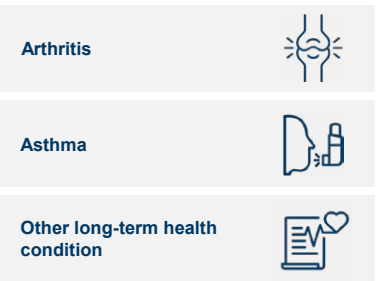


## Education and qualifications

|                                             |                                           |                                                   |
|---------------------------------------------|-------------------------------------------|---------------------------------------------------|
| <b>Have completed Year 12 or equivalent</b> | <b>Have completed a Bachelor's degree</b> | <b>Have completed a Certificate level (total)</b> |
| Glen Innes 33.6%                            | Glen Innes 19.7%                          | Glen Innes 55.3%                                  |
| NSW 58.9%                                   | NSW 32.9%                                 | NSW 32.3%                                         |

## Community and wellbeing

**46.8%** reported having no long-term health conditions in the 2021 Census. Of those who reported long-term health conditions, the most common where:



## Score of 1 within NSW and Australia

in terms of their relative socio-economic advantage and disadvantage (IRSAD). This indicates a high level of disadvantage in Glen Innes when compared to the rest of NSW and Australia.

|                    |                  |
|--------------------|------------------|
| <b>Volunteered</b> | Glen Innes 19.3% |
| NSW                | 13.0%            |

Figure 10 Socio-economic summary of the Glen Innes Severn LGA (ABS, 2023), (ABS, 2022)



### 2.1.2. Tenterfield LGA

Tenterfield LGA is situated on the Great Dividing Range at the northern end of the New England Tablelands, bordered by Glen Innes to the south, Queensland to the north and Casino / Kyogle to the east. The Shire is contained partly in the Clarence River catchment and partly in the Border Rivers catchment – part of the headwaters of the Murray-Darling Basin (Tenterfield Shire Council, 2020).

The Shire has a population of 6810 (ABS 2021 Census) – with 48.9% male and 51.1% female. Median age 55 and median weekly household income \$885. The main town, Tenterfield, has a population of 4,100, the next largest centre, Urbenville has a population of 300.

Housing type in Tenterfield is dominated by separate house dwellings (94.7%) which was higher compared to NSW (65.6%). Tenterfield also had a lower weekly median rent (\$240 per week) which was less than NSW (\$420 per week) (ABS, 2022). According to the Rental Affordability Index (RAI), renting in Tenterfield is considered generally affordable compared to other parts of NSW, specifically coastal areas, but less affordable than Glen Innes (SGS Economics & Planning, 2024). In addition, Tenterfield had a lower occupancy rate compared to NSW, which could indicate a lower demand for housing and lower rental rates in Tenterfield (ABS, 2022).

There are two major highways in Tenterfield, with the New England Highway running north-south and the Bruxner Highway east-west. The New England Highway provides links north to Queensland, and south to Tamworth. The Bruxner Highway runs east to Casino, Lismore, Ballina and Byron Bay, and west to Goondiwindi and Moree.

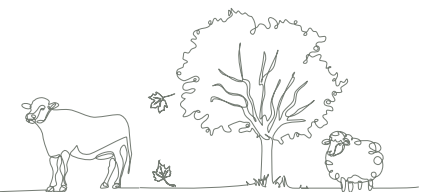
There are six airports within a 3.5-hour radius of Tenterfield, offering daily domestic flights from Armidale, Ballina, Tamworth, Toowoomba and Gold Coast. International and domestic travel is available from Brisbane, approximately 3.5 hour drive from Tenterfield. Regional coaches connect Tenterfield to Armidale and Inverell daily, with further linkages to Tamworth, Brisbane and Sydney via private coaches to connecting trains.

The majority of the region's services and facilities are located in the township of Tenterfield, with the population dispersed throughout the villages of Jennings, Drake, Urbenville, Mingoola, Torrington, Legume and Liston. The region is home to many national parks, state forests, nature reserves and parklands, which provide recreational opportunities including hiking, camping, fishing, cycling, kayaking, birdwatching, picnicking, scenic drives and 4WD trails.

The administrative and focal centre of the Shire, Tenterfield is located at the intersection of the New England and Bruxner Highways. Tenterfield offers a range of cafes, restaurants, sporting clubs, retail outlets, professional services, parks and gardens, as well as a cultural centre and public library.

Key businesses, services and facilities in Tenterfield LGA include:

- Shops and businesses –boutique shops, newsagency, cafés, restaurants, supermarkets, pharmacies and a fitness centre.
- Community services and facilities – three art galleries, two libraries, a maker-space, theatre, employment service, numerous parks, sports fields, playgrounds, a swimming centre, skate park, medical centres, bowling and golf clubs.
- Accommodation – boutique hotels, motels, camping and caravan parks, B&Bs and farmstays.
- Education – three state primary schools, one non-government primary school, one state secondary school, TAFE NSW Tenterfield campus and University of New England Study Centre.
- Emergency services – two hospitals, two police stations, 14 rural fire services, NSW SES unit, and two ambulance services.

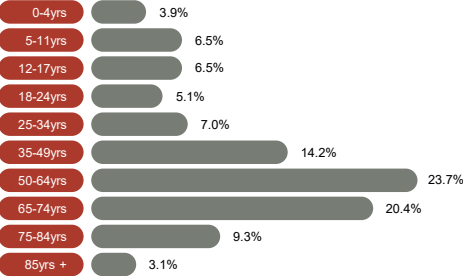


# Tenterfield Shire LGA

## Population characteristics



### Age distribution



|                   |          |
|-------------------|----------|
| <b>Median age</b> |          |
| Tenterfield       | 55 years |
| NSW               | 39 years |

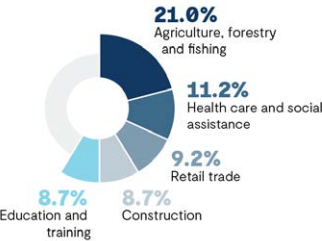
|                      |       |
|----------------------|-------|
| <b>Born overseas</b> |       |
| Tenterfield          | 8.2%  |
| NSW                  | 29.3% |

|                                                                                  |       |
|----------------------------------------------------------------------------------|-------|
| <b>Speaks a language other than English</b>                                      |       |
| Tenterfield                                                                      | 2.9%  |
| NSW                                                                              | 26.6% |
| With the top 3 most spoken language other than English in Tenterfield including: |       |
| » German                                                                         | 0.4%  |
| » Italian                                                                        | 0.2%  |
| » Afrikaans                                                                      | 0.2%  |

|                                                |      |
|------------------------------------------------|------|
| <b>Require assistance with core activities</b> |      |
| Tenterfield                                    | 3.9% |
| NSW                                            | 2.7% |

## Work and economy

### Top industries of employment



### Top occupations



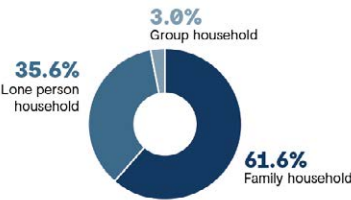
|                                 |       |                                   |         |                               |       |
|---------------------------------|-------|-----------------------------------|---------|-------------------------------|-------|
| <b>Unemployment</b>             |       | <b>Labour force participation</b> |         | <b>Journey to work by car</b> |       |
| Tenterfield                     | 7.0%  | Tenterfield                       | 44.6%   | Tenterfield                   | 62.4% |
| NSW                             | 4.9%  | NSW                               | 58.7%   | NSW                           | 46.6% |
| <b>Median individual income</b> |       | <b>Median household income</b>    |         |                               |       |
| Tenterfield                     | \$490 | Tenterfield                       | \$885   |                               |       |
| NSW                             | \$813 | NSW                               | \$1,829 |                               |       |

## Family and dwelling characteristics

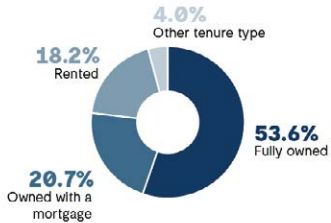
|              |                                             |
|--------------|---------------------------------------------|
| <b>42</b>    | suburbs                                     |
| <b>2.1</b>   | Average household size people               |
| <b>94.7%</b> | of residential dwelling are separate houses |
| <b>5.2%</b>  | of households had no motor vehicle          |

|              |                                                          |
|--------------|----------------------------------------------------------|
| <b>80.1%</b> | of residential dwellings are occupied                    |
| <b>77.1%</b> | of people have lived at the same address as one year ago |
| <b>36.6%</b> | Experience rental stress                                 |
| <b>4.0%</b>  | rent social housing                                      |

### Household type



### Tenure type



## Education and qualifications

|                                             |       |                                           |       |                                                   |       |
|---------------------------------------------|-------|-------------------------------------------|-------|---------------------------------------------------|-------|
| <b>Have completed Year 12 or equivalent</b> |       | <b>Have completed a Bachelor's degree</b> |       | <b>Have completed a Certificate level (total)</b> |       |
| Tenterfield                                 | 34.9% | Tenterfield                               | 20.2% | Tenterfield                                       | 53.1% |
| NSW                                         | 58.9% | NSW                                       | 32.9% | NSW                                               | 32.3% |

## Community and wellbeing

**48.2%** reported having no long-term health conditions in the 2021 Census. Of those who reported long-term health conditions, the most common where:

|                                |  |
|--------------------------------|--|
| <b>Arthritis</b>               |  |
| <b>Mental health condition</b> |  |
| <b>Asthma</b>                  |  |

## Score of 1 within NSW and Australia

in terms of their relative socio-economic advantage and disadvantage (IRSAD). This indicates a high level of disadvantage in Tenterfield when compared to the rest of NSW and Australia.

|                    |       |
|--------------------|-------|
| <b>Volunteered</b> |       |
| Tenterfield        | 22.2% |
| NSW                | 13.0% |

Figure 11 Socio-economic summary of the Tenterfield LGA (ABS, 2023), (ABS, 2022)



## 2.2. First Nations Peoples

First Nations Peoples have a long and proud history in the region and their affinity with the natural environment runs deep. Prominent First Nations Peoples with strong connections and responsibilities to Country in the area include the Ngorabul and Jukembal Peoples. With a deep-rooted affinity for the natural environment, the Ngorabul and Jukembal peoples possess a long and distinguished presence in the Glen Innes Severn and Tenterfield LGAs.

The Ngorabul people are identified as the traditional custodians of the Glen Innes Several LGA (Glen Innes Highlands, 2024b). Inhabiting this region for millennia, they have developed a comprehensive understanding of the highland climate and its intricacies (Glen Innes Highlands, 2024b). This accumulated knowledge, passed down through generations, presents a valuable resource for contemporary residents seeking to establish sustainable land management practices (Glen Innes Highlands, 2024b).

The Ngorabul people utilised controlled burns as a land management tool (Glen Innes Highlands, n.d.). This practice involves strategically setting fires to manage vegetation growth, promoting new plant life, and reducing the risk of uncontrolled wildfires. Additionally, the Ngorabul people demonstrably practice a form of mindful stewardship (Glen Innes Highlands, 2024b). This approach likely involved selective hunting practices and a deep understanding of animal populations within their territory. Understanding the valuable knowledge embedded within the Ngorabul peoples traditional land management practices highlight the potential applications in developing sustainable solutions for the future.

The Jukembal people hold the distinction of being the earliest inhabitants of the Tenterfield region (Tenterfield n.d.). Their ancestral territory encompassed a vast area, stretching from near Glen Innes to Stanthorpe and encompassing the Great Dividing Range (Visit Tenterfield, 2024). The Jukembal name itself means “the people who say jogom” (jogom meaning no), offers a glimpse into their cultural identity (Visit Tenterfield, 2024). Additionally, their designation for the region, “Moombillen,” signifying “place of wild honey,” reveals their deep connection to the land’s natural bounty (Tenterfield, 2024).

The presence of the Jukembal people is further substantiated by the existence of numerous significant archaeological sites. These include bora rings, scarred trees, and Bluff Rock (Tenterfield n.d.). The latter is believed to be the location of the first documented conflict between local Aboriginal people and European settlers (Visit Tenterfield, 2024).

Preservation efforts are evident in the collection of Aboriginal artefacts housed at the Sir Henry Parkes Memorial School of Arts Museum (Visit Tenterfield n.d.). This collection offers tangible link to the region’s Aboriginal heritage, showcasing implements such as stone axe heads, grinding tools, boomerangs, and tools used for hunting and fire-making (Visit Tenterfield, 2024).

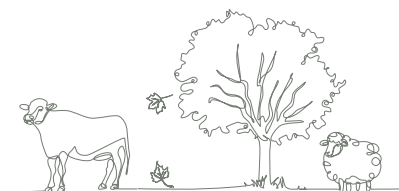
The Moombahlene Local Aboriginal Land Council serves the needs of the Aboriginal community with the Tenterfield LGA (Visit Tenterfield, 2024). Additionally, the Jubullum Aboriginal Land Council caters to the communities situated east of Tenterfield, encompassing Drake and Tabulam (Visit Tenterfield, 2024).

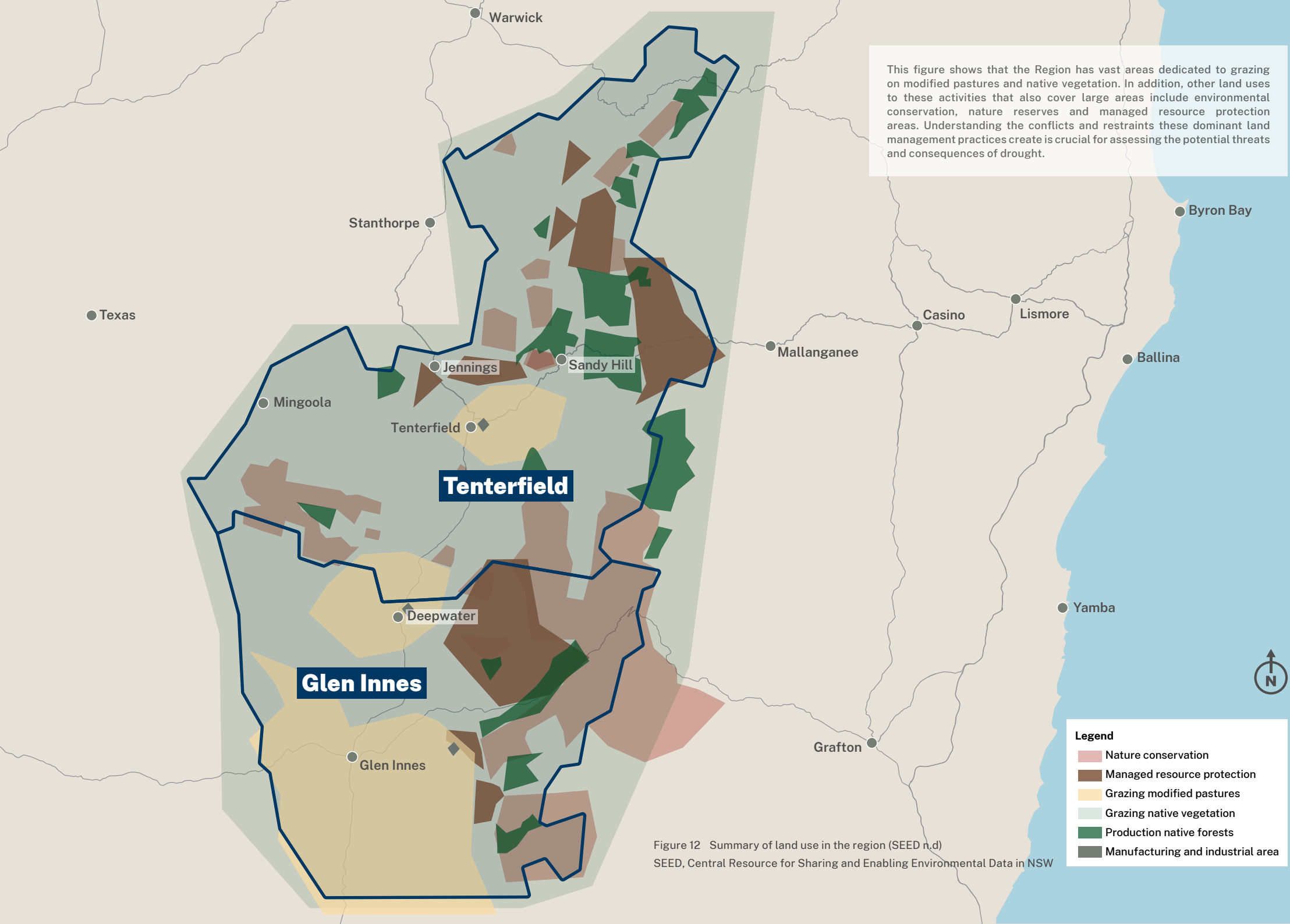
The dominant Indigenous language groups in the broader region are identified as the Kamilaroi (also known as Gamilaraay and Gamilaroi) and the Bundjalung (including the Bunjalung, Badjalang, and Bandjalang peoples) (Visit Tenterfield, 2024).

## 2.3. Land use

Land use is largely determined by climate and geography. At 1,062 metres above sea level, Glen Innes is the highest large town in Australia, with low levels of humidity and occasional snowfall. Tenterfield is slightly warmer in summer months, with occasional frosts and snowfall in elevated areas during winter. The diversity of climate and geography in this region leads to diverse land use.

Land in both the Glen Innes Severn and Tenterfield LGAs is predominantly used for beef cattle and sheep production, with large areas of grazing land underpinning the region’s agricultural economy, as illustrated in Figure 3. The land use is reflective of dryland agriculture with 82.1% (550,600 hectares) of the region being used for grazing (Table 2). Of the total agriculture land use in the Region, only 3.8% (25,306 hectares) is used for cropping (ABS 2022a).





| Land use<br>(ha, main land use)      | Glen Innes<br>Severn LGA | Tenterfield<br>LGA | Region<br>Total |
|--------------------------------------|--------------------------|--------------------|-----------------|
| <b>Total area of holding</b>         | 336,430                  | 334,437            | <b>670,867</b>  |
| <b>Agriculture</b>                   | 302,156                  | 278,044            | <b>580,199</b>  |
| <b>Grazing (all)</b>                 | 282,361                  | 268,203            | <b>550,564</b>  |
| Grazing improved                     | 183,102                  | 85,602             | 268,703         |
| Grazing other                        | 99,260                   | 182,601            | 281,861         |
| <b>Cropping (all)</b>                | 20,600                   | 4,705              | <b>25,306</b>   |
| Cropping wheat                       | 2,153                    | 204                | 2,356           |
| Cropping Oilseeds                    | 2,863                    | 853                | 3,716           |
| Cropping Hay                         | 3,277                    | 543                | 3,820           |
| Cropping Oats                        | 2,104                    | 560                | 2,664           |
| <b>Not agriculture</b>               | 21,637                   | 26,175             | <b>47,812</b>   |
| Conservation/protection purposes     | 11,331                   | 11,434             | 22,765          |
| Other areas not used for agriculture | 10,306                   | 14,741             | 25,047          |

Table 2 Land Use for Glen Innes Severn and Tenterfield LGA, Source: ABS 2022a

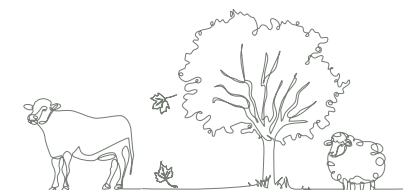
The majority of land in the Glen Innes Severn LGA is characterised by large lot residential and farmland with the primary purpose of agricultural production. General residential and public recreation areas are centred around major highways with National Parks and nature reserves encompassing a large portion of the northeastern boundary of the LGA. The area has a rich agricultural and mining base with a significant tourism and service sector (Glen Innes Severn Council, 2024).

Tenterfield LGA is equally a predominantly rural area, encompassing a total land area of 732,400 hectares, with about 60% of the population living in the town of Tenterfield (Economy.id, 2024). Most rural land is used for primary production, with national parks and state forests cover large areas of the Tenterfield LGA. The community relies on its agricultural industry, with rural land used largely for cattle grazing, sheep grazing and timber production (Economy.id, 2024)

The towns and urban areas in both the Glen Innes Severn and Tenterfield LGAs take up a relatively small proportion of overall land use which is reflected in the population distribution in the areas. Glen Innes Severn LGA had a population density of 1.6 people per square kilometre, compared to 0.9 people per square kilometre in the Tenterfield LGA (ABS, 2022). The area contains protected lands that are used for recreation, cultural heritage, tourism, and ecological conservation. In 2022, Glen Innes Severn LGA had a total of 24 protected land areas (five national parks, two nature reserves and 15 protected land areas) covering a total of 122,773 hectares. The Tenterfield LGA has 40 protected land areas, including 15 national parks, nine nature reserves and 16 protected land areas covering a total of 103,406 hectares (ABS, 2021a). Popular National Parks within the region include the Guy Fawkes River, Butterleaf, Nymboida, Bald Rock, Basket Swamp, Boonoo Boonoo, Giraween, Koreelah, Sundown and Tooloom National Parks as well as the World Heritage listed Washpool National Park, Gibraltar Range National Park and Gondwana Rainforest of Australia (Glen Innes Highlands, 2024d & Visit Tenterfield, 2024a).

Figure 3 illustrates the dominance of primary production and open agriculture, which can be exposed during periods of drought. The map also shows limited manufacturing and opportunity for cropping in the region due to large areas that are defined as Nature Conservation, Managed Resource Protection (and Other Minimal Use), thus reducing the potential for diversification in the region away from just grazing.

Figure 13 Agricultural produce breakdown (ABS, 2021a)

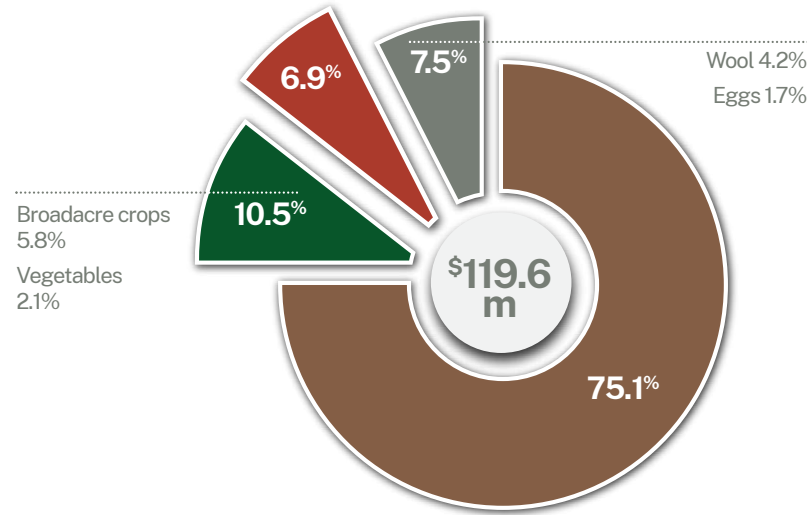


### 2.3.1. Agriculture

The economy and livelihoods of Glen Innes Severn and Tenterfield LGA communities have largely been shaped by their agricultural industries, including livestock production, horticultural pursuits, and cereal, oil seed, pulses and hay and silage crops. At the 2021 ABS census, agricultural produce (including forestry) from Glen Innes Severn and Tenterfield LGAs was valued at \$119.6 million and \$76.4 million, respectively (ABS, 2022). A full breakdown of each LGAs agricultural produce is provided in Figure 4.

The Agriculture, Forestry and Fishing sector is the highest in both value (economic output) and employment for the Glen Innes Severn and Tenterfield communities (ABS, 2022). However, the percentage employed in this sector has been decreasing since the last census. The industry in both LGAs is heavily skewed to livestock over cropping, this highlights exposure to vulnerability in agricultural income during times of drought.

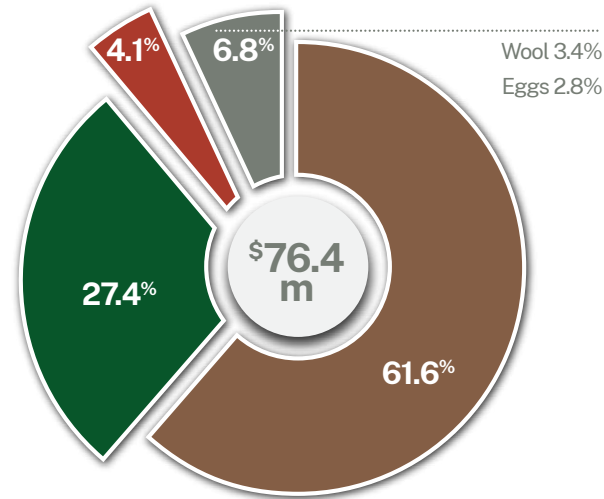
To build local resilience, the diversity of production in the Glen Innes Severn LGA includes production of beef, pigs and poultry to fruit and nuts, vegetables and berries along with cereal crops, oilseed, pulses and legumes (ABS, 2021a). Key agricultural industries in the Glen Innes Severn LGA include the production of Angus and Wagyu cattle, as well as fine wool and honey production (Glen Innes Severn Council, 2024). The diversity of production in the Tenterfield LGA includes orchard fruit and nuts, vegetables, berries, cut flowers, to beef and dairy cattle, sheep, pigs, goats and poultry along with cereal, oil seed, pulses and hay and silage crops (Tenterfield Shire Council, 2020).



#### Glen Innes

##### \$119.6 million equals:

- Livestock slaughtered – cattle and calves – **75.1%** highest value across all agricultural products
- All crops – **10.5%** (including broadacre crops and vegetables at **5.8%** and **2.1%** respectively)
- All other animals slaughtered equated to **6.9%** including pigs, sheep and poultry
- An additional **7.5%** is produced from livestock products such as wool at **4.2%**, and eggs at **1.7%**



#### Tenterfield

##### \$76.4 million equals:

- Livestock slaughtered – cattle and calves – **61.6%** highest value across all agricultural products
- All crops – **27.4%** (including vegetables, fruit and nuts, orchard fruit and cut flowers)
- All other animals slaughtered equated to **4.1%** including pigs, sheep and poultry
- An additional **6.8%** is produced from livestock products such as eggs at **3.4%** and wool at **2.8%**



While recognising the importance of these economic drivers, the communities of Glen Innes Severn and Tenterfield LGAs seek to further diversify their economic and employment base to reduce exposure to the negative impacts of changing weather patterns (Glen Innes Severn Council, 2024). This showcases the region's focus on building absorptive capacity to shifts in conditions. This resilience is supported by its natural resources including fertile soils, favourable climatic conditions and access to water for irrigation. However, increasing droughts have highlighted the severity of natural hazards and its vulnerability to the impacts of insufficient water (Tenterfield Shire Council, 2020). Reliance on drought-prone natural resources, including water from the Clarence River and Border River catchments, along with rainfall and coupled with agriculture forming a major contributor to the total economic output of the areas, leaves both LGAs vulnerable to drought.

The natural environment and cultural heritage of Glen Innes Severn and Tenterfield LGAs play a vital role in the tourism sector. Changing environmental conditions negatively impact quality of life, biodiversity and the viability of major industries such as forestry, agriculture and tourism. Extreme weather events add significant costs to the bottom line, deter tourists and add to Council's repair costs (Glen Innes Severn Council, 2024). Water management during drought is ranked as a key concern in the communities. The adoption of more innovative and sustainable technologies around biotechnology, remote farm monitoring and automation, and intensive agriculture could bring opportunities to grow the Shire's agricultural base.

Glen Innes Severn LGA uses 1,058 megalitres (ML) of water annually for agricultural production. Pastures (including lucerne) and cereal crops used for grazing or fed off is the most significant user of water for irrigated

agricultural production, at 889 ML or 84%. Cereal crops cut for hay and silage use 169 ML or the remaining 15.9% (ABS, 2022b).

The Tenterfield LGA uses 2,343 ML of water annually for agricultural production. The most significant user of water for irrigated agricultural production was fruit trees, nut trees, plantation or berry fruits at 770 ML or 32.8% of water used. Cereal crops cut for hay and silage utilised 29.9% (701 ML), and vegetables accounted for 17.3% (406 ML) (ABS, 2022b).

Efficient water and wastewater infrastructure is important for maintaining optimum water supplies for residents, industry and agricultural production, environment and Aboriginal cultural values. In times of drought, it is particularly important to ensure water supplies for each of these stakeholders is maintained.

### 2.3.2. Region's industry

The Region has a dynamic and evolving economic landscape. Agriculture, including cattle and sheep grazing, cropping and forestry are the main agricultural industries in the Region generating \$211.927 million annually (Glen Innes Highlands, 2018). Glen Innes Severn LGA takes pride in its premium Angus and Wagyu beef production, renowned for its exceptional quality (Remplan Online, 2023). A thriving honey industry further cements the region's position as a hub for high-value agricultural goods (Remplan Online, 2023).

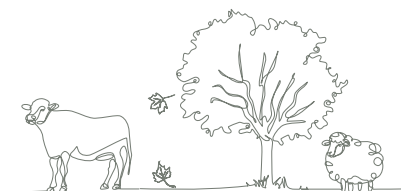
Recognising the limitations of a singular economic focus, diversification has become a priority for the region. Sectors like healthcare, construction, education, and public administration are experiencing growth, fostering a more resilient economic base (Department of Primary Industry, 2020). Tourism and aged care are emerging as significant contributors, attracting

investment and creating new employment opportunities (Department of Primary Industry, 2020). Notably, tourism offers the additional benefit of elevating the region's profile, potentially influencing relocation decisions, which aligns with the goal of a growing and vibrant community.

While the region's Gross Regional Product (GRP) stands at a healthy \$614 million, its heavy reliance on agriculture can lead to economic volatility (Remplan Online, 2023). This is a key area where diversification efforts are crucial. Tenterfield LGA, with a GRP of \$214 million, serves as an example of successful diversification (Department of Planning, Industry and Environment, 2019). Its robust and diversified horticultural sector significantly contributes to the regional economy. The fertile lands surrounding Tenterfield LGA nurture a wide variety of fruit crops, vegetables, eggs and ornamental plants (Tenterfield, 2024).

The Northern New England High Country Regional Economic Development Strategy (2023) aligns with the region's priorities. It identifies geo-tourism and agritourism as key growth opportunities. Leveraging its considerable strengths in agriculture and horticulture, the region has the potential to grow its agritourism sector, which is expected to reach \$18.6 billion by 2030 with an annual growth rate of around 5% (CSIRO, 2018). This aligns with the vision of a renewed and authentic economy, capitalising on the region's unique offerings.

The Glen Innes Severn and Tenterfield LGAs showcase a dynamic and evolving economy. While agriculture remains the cornerstone industry, diversification efforts are building, fostering a more resilient economic base.

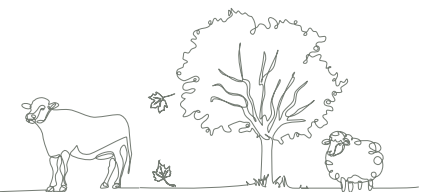




## 2.4. The Region's water

Tenterfield Dam (1,300ML capacity) is Tenterfield LGAs primary source of raw water and is supplemented by Shirley Park Bore when the dam is at critical low levels during periods of drought. The water treatment and supply are managed by Tenterfield Water Treatment Plant (WTP) through a concrete reservoir and 56 kilometres of watermains (Viridis Consultants, 2021). Construction of a new WTP has recently been completed which has the capacity to process 2.6ML/day as well as having the capacity to treat bore water if required (Department of Planning, Industry, and Environment, 2023).

Beardy Waters Reservoir has a capacity of 488 ML and is the raw water source supplying the Glen Innes Severn LGA through approximately 90 kilometres of water mains. The Glen Innes WTP has the capacity to treat 10ML/day and has an off-stream storage facility which is maintained at 100% capacity during non-drought periods. In addition to the Reservoir, three (3) bores have been commissioned within the Tenterfield LGA which have a combined 3ML/day capacity. Deepwater weir (62ML storage volume) and treatment plant has a capacity of 0.7ML/day and supplies the town of Deepwater. Other villages within the Glen Innes Severn LGA do not have an established reticulated water supply system (Glen Innes Severn Council, 2023).



## 2.5. Disaster and recovery

The 2019-2020 bushfires occurred during the hottest and driest years on record in Australia (up to 2020) and in regions that were already experiencing the impacts of drought (Royal Commission into National Natural Disaster Arrangements, 2020). The Glen Innes Severn and Tenterfield LGAs were no exception. They were affected by these extreme conditions leaving the region vulnerable to the Black Summer Bushfires, which tragically claimed three lives in the region and devastated areas like Wyaliba (Cockburn, 2019). The 2019 bushfires burned more than 25,000 hectares across the Tenterfield LGA. Specific fire events in the region included the Long Gully Road fire, Gulf Road, Mt McKenzie and Kangawalla in the Glen Innes Severn LGA (Australian Institute for Disaster Resilience, n.d.).

In the aftermath of the fires, the Regional Economic Development Strategy (REDS) served as a fire impact addendum for the Northern New England High Country. This document outlined short, medium, and long-term focus areas for local, state, and Commonwealth governments to prioritise industry and economic recovery funding (Regional NSW, 2020). Recognising the significant losses sustained by agriculture and tourism sectors, the REDS prioritised infrastructure restoration and support for these key economic drivers. The strategy emphasised improved connectivity as a foundation for growth, fostering the development of key sectors, and attracting new businesses and residents (Regional NSW, 2020). This comprehensive addendum offered a well-defined roadmap for the region's long-term economic stability.

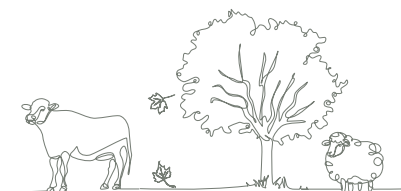
Despite the widespread devastation, the community spirit persevered. Initiatives such as the workshops facilitated by the Glen Innes Natural Resources Advisory Committee (GLENRAC) exemplified this resilience. Funded by Westpac's Foundation for Rural and Regional Renewal (FRRR) Tackling Tough Times Together program, these workshops aimed to build the skills, knowledge, and confidence of the Glen Innes farming community (Foundation for Rural Regional Renewal, n.d.). The workshops focused on crucial topics such as drought management, sustainable agriculture practices, and recovery strategies, providing a platform for knowledge sharing and collaboration, fostering a sense of community and empowering residents to navigate the challenges of drought and fire recovery.

Recovery efforts faced a significant new hurdle with the global COVID-19 pandemic in 2020. The pandemic coincided with the critical period of bushfire recovery, severely impacting established support systems. A critical consequence was the temporary closure of recovery centres in the Tenterfield LGA. These centres had served as vital hubs for information dissemination, emotional support, and practical assistance to those affected by the bushfires. Their closure created a gap in readily accessible support, hindering progress. The pandemic's border restrictions also posed additional challenges for the region (Power, 2021).

In January 2024, support emerged with the unveiling of three crucial projects funded by the Australian Government's Black Summer Bushfire Recovery Grants Program (Glen Innes Severn Council, 2024). These projects targeted a wide range of disaster recovery and long-term resilience needs within both LGAs.

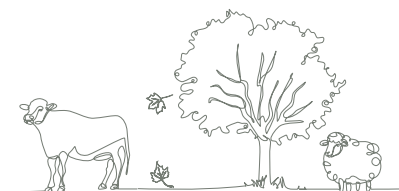
The first project prioritised the well-being of the community by focusing on youth and sporting facilities. Upgrading the existing skate park and constructing shared pathways within a sporting precinct fosters a more connected and active community (Glen Innes Severn Council, 2024). This investment contributes to long-term resilience by promoting social interaction and physical activity, vital aspects of community recovery. The second project addressed preparedness for future disaster events at the Pinkett War Memorial Hall and Reserve. The expansion of critical water storage capacity ensures a reliable water source for both human consumption and livestock needs during emergencies, including droughts (Glen Innes Severn Council, 2024). Additionally, the project facilitates water storage for fire protection purposes, safeguarding the grounds and facilities from potential future bushfires. The final project tackled a critical aspect of emergency response – accurate rural addressing (Glen Innes Severn Council, 2024). Upgrading signage for 2,700 eligible rural properties within the region allows emergency services to locate properties and their entrances swiftly during critical situations (Glen Innes Severn Council, 2024). This expedited response time can play a crucial role in saving lives and minimising property damage during future disasters.

The experience of the Glen Innes Severn and Tenterfield LGAs exemplifies the challenges posed by extreme unforeseen disasters and the importance of collaborative recovery efforts that combine government support with community-driven initiatives.



# 03

## History of Drought Impacts



### 3. Drought, climate and impacts

Drought as a natural hazard is pervasive, recurring, and distressing. It is difficult to determine a start and end or identify when the landscape has recovered. Like other disasters, droughts are difficult to predict or compare, with differences in seasonality, extent, duration, severity, among other variables all contributing to the drought experience. Drought affects all parts of the community from agricultural producers and suppliers to industry, First Nations Peoples and the broader community. The impacts range from financial to health and wellbeing and the physical decline of the environment.

#### 3.1. What is drought?

Drought is defined as “a prolonged, abnormally dry period when the amount of available water is insufficient to meet our normal use” (BoM, n.d). Australia has highly variable rainfall records and in contrast also has highly variable periods of low rainfall. Both the Bureau of Meteorology and Kirono et. al. (2020) defines four types of drought (Figure 14) including meteorological, agricultural, hydrological and socio-economic.

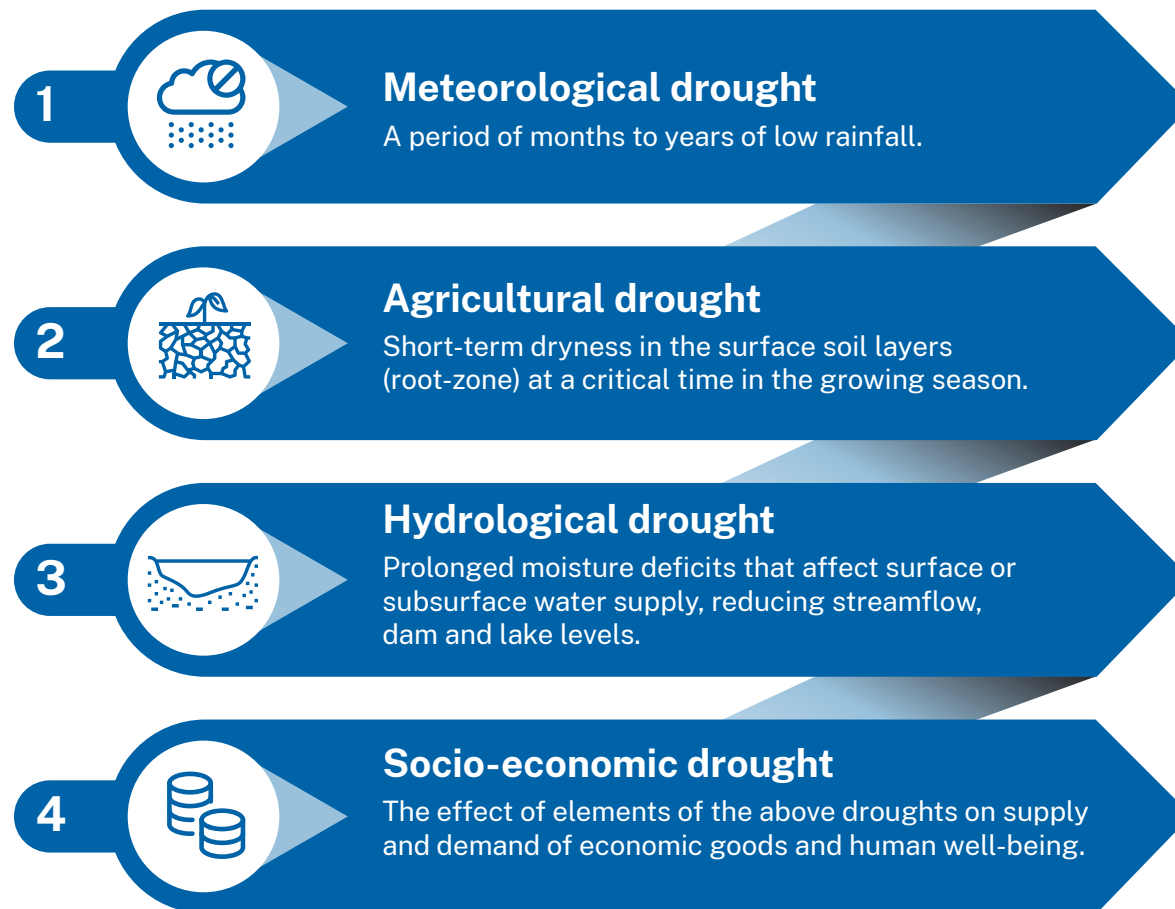
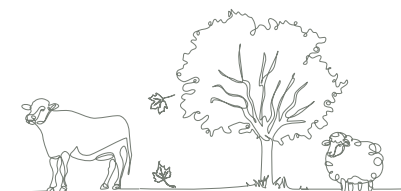


Figure 14 Types of drought (BoM, 2023)



## 3.2. Drought monitoring in NSW

Drought monitoring over the years has become increasingly complex. The most common means of currently monitoring drought is through the Enhanced Drought Information System (EDIS) which is a publicly available tool that monitors seasonal conditions across NSW. EDIS was launched in March 2018 and is used by government and farming stakeholders to build drought risk awareness, emphasise drought preparedness and improve confidence in drought monitoring and early warning.

A key feature of EDIS is the development of the NSW DPI Combined Drought Indicator (CDI). The CDI combines meteorological, hydrological, and agronomic definitions of drought (above) using indexes for rainfall, soil and water, and plant growth. From these, a fourth index, drought direction Index (DDI), is developed. EDIS is undergoing redevelopment to provide farmers with world-leading weather and climate data to enable better business decisions. It is important to recognise the CDI provides an aggregated view of NSW, and that on-ground conditions can be different to those displayed in the maps. They provide an 'on average' view of a particular region only.

### 3.2.1. Stages of drought

When used together, the indexes of the EDIS indicate the stage of drought.

The five stages progress from a non-drought category, where all indicators suggest good conditions for production, to recovery, through a Drought Affected (weakening or intensifying) category, a drought category, and finally into Intense Drought. The five stages are shown in Figure 15.

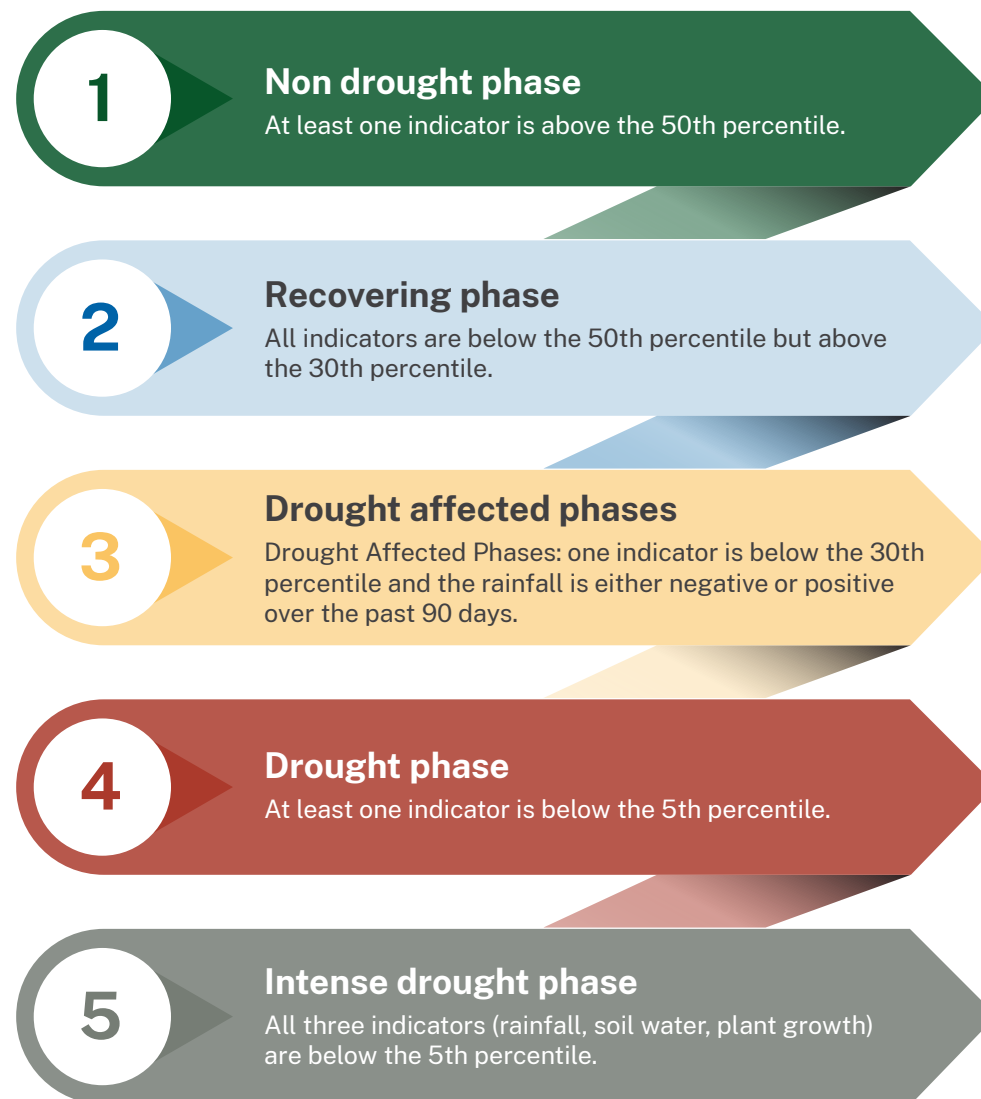
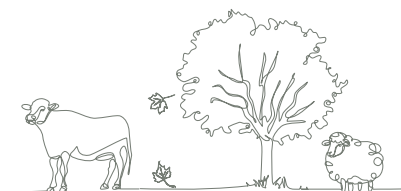


Figure 15 Stages of drought in NSW (adapted from DPIRD, 2023)



The map illustrates the severity and extent of the recent drought's environmental impact on the Region at a point in time (July 2024). The outlined area is dynamic and susceptible to shifts due to ongoing environmental changes influencing the region's climate.

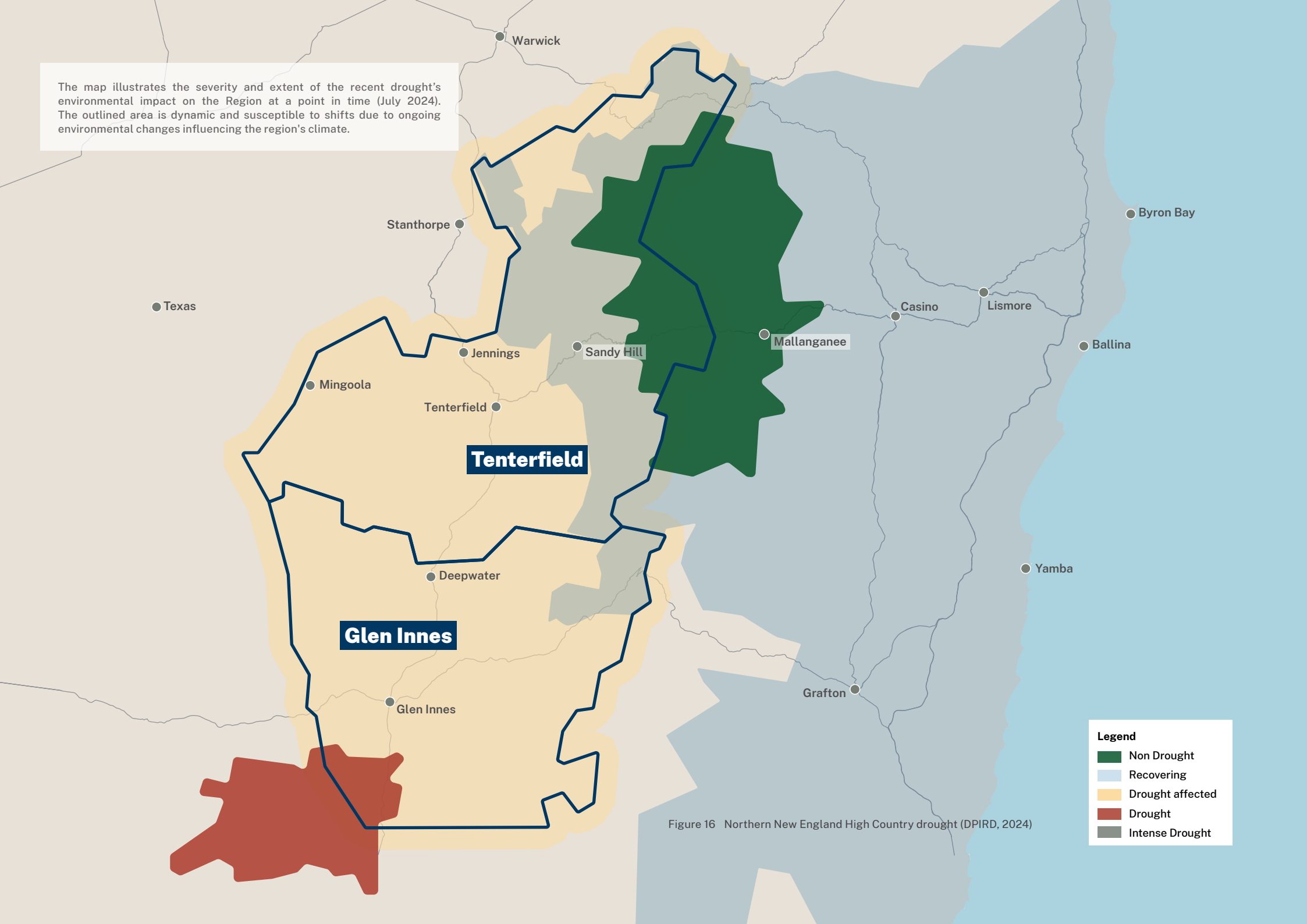


Figure 16 Northern New England High Country drought (DPIRD, 2024)

Figure 16 shows the boundary of Glen Innes Severn and Tenterfield LGAs and the various stages of drought that the region is currently experiencing (in July 2024). The southwestern perimeter of the Glen Innes Severn LGA is currently experiencing drought while the northeastern side is in a recovery phase. The remainder of the LGA is drought affected; however, it is unclear from the figure whether it is in a weakening or intensifying phase. The northern half of the Tenterfield LGA is predominantly in a recovery and non-drought phase. Like Glen Innes Severn, the remainder of the LGA is drought affected and is unclear as to whether it is in a weakening or intensifying phase.

### 3.3. Historical droughts in the Glen Innes Severn and Tenterfield Region

Climate anomalies, such as drought, are regular occurrences in Australia, and can occur at any given time as a result of Australia’s large natural climate variability. Throughout the years, Glen Innes Severn and Tenterfield LGAs have experienced a spectrum of droughts characterised by differing durations and intensities, as outlined in Table 3. Climate change is having a profound effect on the Australian climate, directly impacting the likelihood of drought. Projections based on climate modelling suggest that with ongoing global warming, Australia is likely to spend more time in drought, with longer and more intense drought conditions (ESCC, n.d).

| Drought Period         | Duration  | Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|------------------------|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The Federation Drought | 1895–1902 | One of Australia's worst droughts. It had far-reaching implications for agriculture, water availability, and the economy.                                                                                                                                                                                                                                                                                                                                                          |
| World War II Drought   | 1937–1945 | Occurred frequently over eastern Australia, characterised by intense dry spells and breaks, similar to the Federation drought, but with more intermittent dryness. Major driver of the Black Friday bushfires in January 1939.                                                                                                                                                                                                                                                     |
| 1965–1968 Drought      | 1965–1968 | Generally dry conditions for Eastern Australia, especially severe in NSW.                                                                                                                                                                                                                                                                                                                                                                                                          |
| 1982–1983 Drought      | 1982–1983 | One of Australia’s most severe droughts in the 20th century, associated with a strong El Nino event.                                                                                                                                                                                                                                                                                                                                                                               |
| The Millennium Drought | 1997–2009 | <p>The region experienced a prolonged dry period which led to water scarcity and agricultural challenges. This drought was particularly significant contrasting with a wet period in northern Australia.</p> <p>This may have been the first major Australian drought that was impacted by the changing climate, with temperatures higher than seen before with two of the wettest years on record for Australia in 2010–11 (Beard et al., 2011, Bureau of Meteorology, 2012).</p> |
| The 2017–2020 Drought  | 2017–2020 | From 2017 to 2020, NSW experienced record-breaking drought that affected the whole state The NSW Border Rivers was in Stage 3 (severe drought) on 1 July 2019, however by August 2019 this had escalated to Stage 4 (critical drought). (Burrell et al., 2020).                                                                                                                                                                                                                    |

Table 3 Historical droughts which effected Glen Innes Severn and Tenterfield LGAs (BoM, n.d.)

The recent drought, from 2017 to 2020, had a significant impact on Glen Innes Severn and Tenterfield LGAs and was considered to be the worst drought in the region. This period of prolonged dryness, exacerbated by high temperatures and minimal rainfall, strained local water resources.





Figure 17 shows the Australian CDI from January 2019 to January 2020, outlining the ‘Exceptional drought’ in the Glen Innes Severn and Tenterfield LGAs (Northern Australian Climate Program, 2024). As a result of prolonged drought combined with bushfires in the region, the communities in Glen Innes Severn and Tenterfield LGAs faced challenges in accessing clean and reliable water supplies. The further detail on impacts has been provided in Section 2.5.

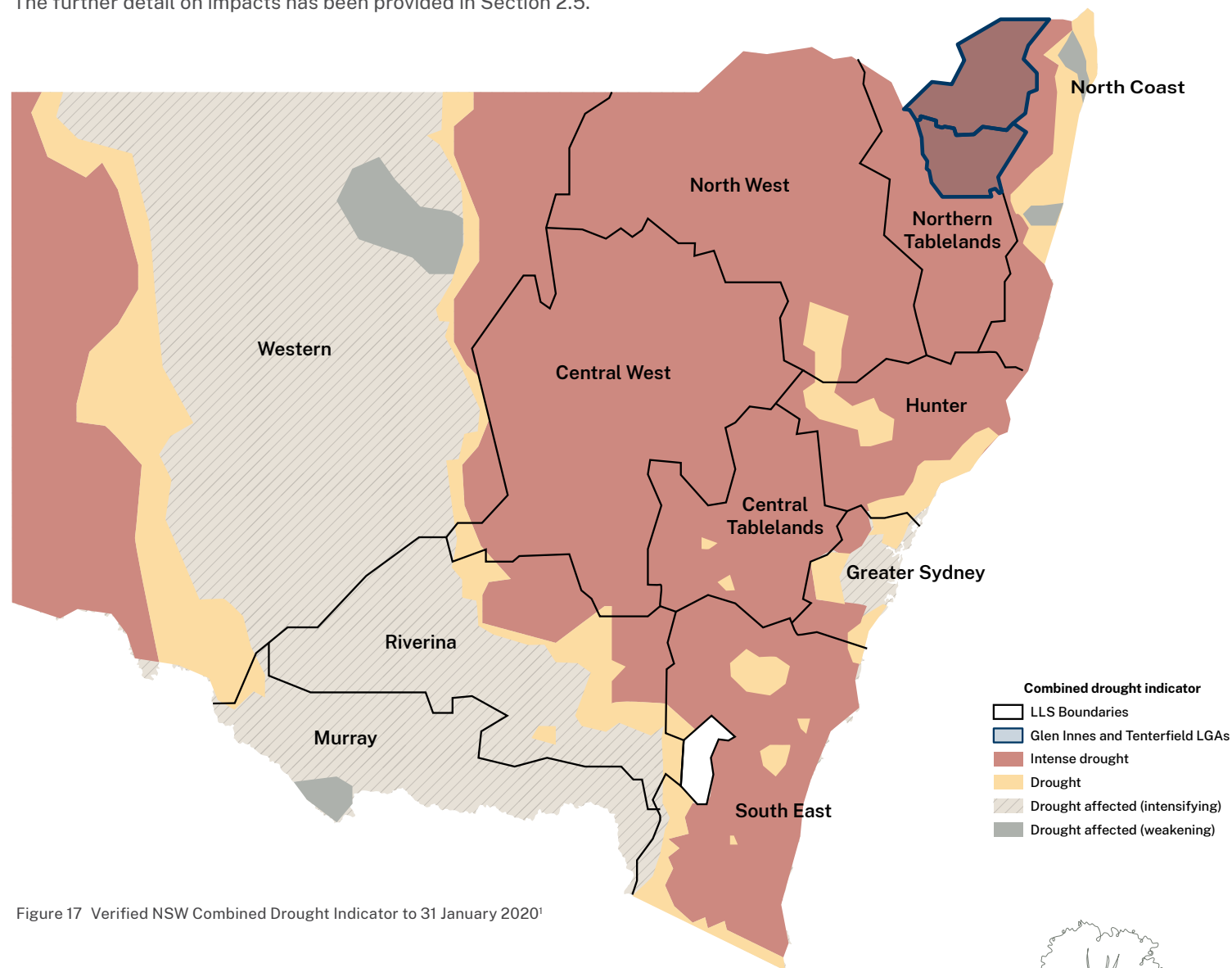
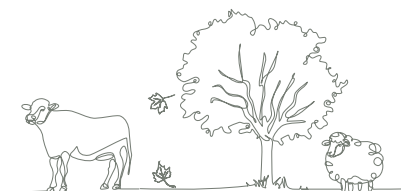


Figure 17 Verified NSW Combined Drought Indicator to 31 January 2020<sup>1</sup>

<sup>1</sup> NSW State Seasonal Update – January 2020



### 3.4. Regional weather and climate

Glen Innes Severn and Tenterfield LGAs, situated near the QLD and NSW border, are characterised by a dynamic and influential climate that significantly shapes their landscape, agriculture, and water management practices. The region falls under the Köppen climate classification as a region of "temperate" climate, typically experiencing warm/mild summers and cooler winters (BoM, 2023). Rainfall distribution throughout the year skews towards the summer months, indicating a summer-dominant precipitation regime, with the lowest rainfall typically experienced in April. January sees the highest temperatures, with an average maximum temperature of 26.3°C, while July experiences the lowest temperatures, with an average minimum of 13.8°C. These climatic conditions contribute to the occurrence of droughts, which have become an integral part of the region's identity and history, rather than isolated incidents.

As discussed in Section 3.2, DPIRD has established three CDIs to aid in defining the various stages of drought. However, there are some meteorological trends that can be observed which can indicate drought. Lower than average rainfall couples with higher than average maximum temperatures often over a prolonged period of time can result in drought. Figure 18 and Figure 19 demonstrate this trend for some of the historical droughts that have occurred in the Northern Tablelands Region. The figures have been prepared for Tenterfield (Federation Park) and Glen Innes Agricultural Research Weather Station as they had the most comprehensive set meteorological data available.

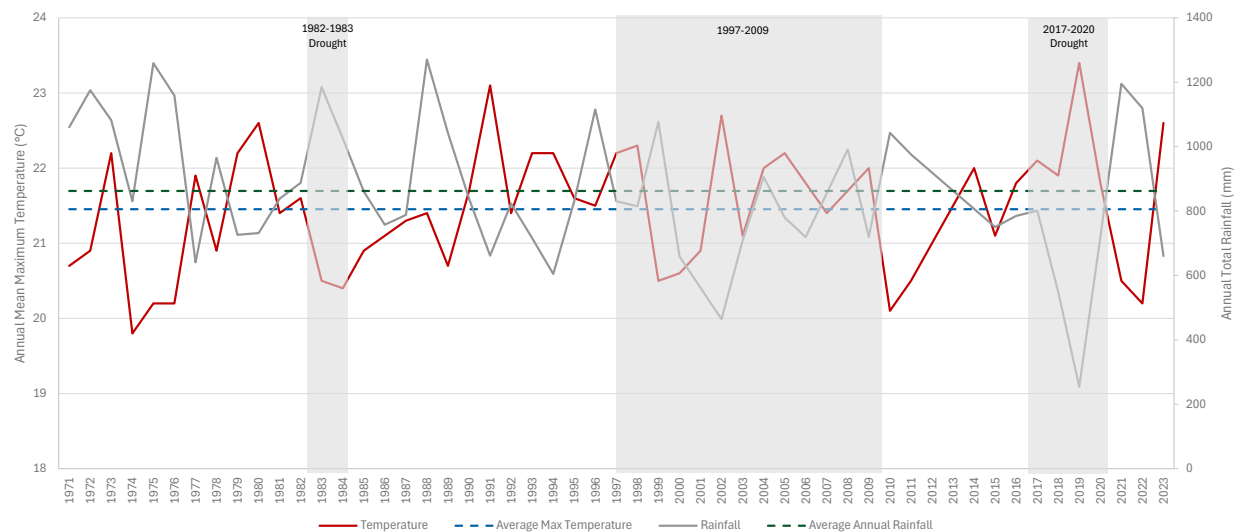
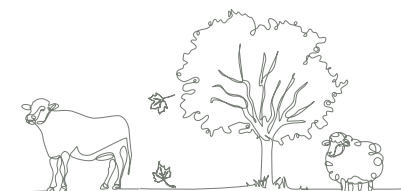


Figure 18 Historical trends in rainfall and temperature data from 1970 to 2023 for Tenterfield (Federation Park)<sup>2</sup>



Figure 19 Historical trends in rainfall and temperature data from 1971 to 2023 for Glen Innes Severn<sup>3</sup>

<sup>2</sup> Source: Bureau of Meteorology (BoM), n.d., accessed May 20, 2024. Note: where there were gaps in data for average annual maximum temperatures, the data has been interpolated and plotted.



Given the direct influence of drought on cropping activities and crop productivity, many farms are financially impacted. Farm profitability statistics for the Region outlines that there is the greatest reduction in profitability towards the tail-end of any period of drought. Data from past droughts provides an understanding that the impacts on farm income, and therefore impacts beyond the farm gate in agricultural communities, shows that the shorter the drought, the quicker the recovery once the drought breaks.

Given the Region's strong agricultural industry it will be critical to continue monitoring the trends in farm profitability and the changing climate so that existing systems and services, including individual farmers, are financially prepared for the next drought.

### 3.4.1. Climate change impacts

Climate change refers to global, long-term shifts in average weather conditions, such as becoming warmer, wetter, or drier over several decades or longer. A growing body of evidence shows Australia's climate has changed and continues to change significantly. This evidence has come from the Commonwealth Scientific and Industrial Research Organisation (CSIRO), Bureau of Meteorology (BoM), and Department of Climate Change, the Environment, Energy & Water New South Wales (DCCEEW); formerly Department of Planning and Environment (DPE). Temperatures in Australia have risen by about 0.9°C since 1910 and there is a high level of scientific confidence that anthropogenic greenhouse gas emissions are a major driver of this increase in temperature (BoM 2018).

Drought projections in Australia are developed using climate simulations which are used to estimate the response of regional climates to anthropogenic change. The latest national drought projections (CSIRO and BoM, 2023) are based on the Standardised Precipitation

Index (SPI) with input of monthly rainfall simulated by 21 CMIP5 GCMs and Standardised Soil Moisture Index (SSMI), a key indicator of agricultural drought.

Future median projections suggest that the region will experience more time in drought, longer duration of drought and more intense drought (Kirono et al., 2020). An increase in the number of days over 35°C and 40°C is predicted. There is high confidence in decreasing soil moisture in the region (particularly in winter and spring) driven by the projected decrease in rainfall (see Figure 20 for further breakdown) and higher evaporative demand under the RCP 8.5 scenario (Ekström et al., 2015). Additionally, the projected increase in drought metrics is consistent with projected decreases in seasonal mean of soil moisture, across the region.

The CSIRO's My Climate View tool was used to analyse the impact of worsening climate change on temperature and rainfall for the Glen Innes Severn and Tenterfield LGAs. Through this tool, we can see how the region's climate is predicted to evolve over time using the Intergovernmental Panel on Climate Change (IPCC) Representative Concentration Pathway (RCP) 8.5. Under this climate change scenario, average maximum temperature in the Glen Innes Severn LGA is predicted to increase from 20.7°C (baseline from 1964 to 1993) to 23.2°C in 2050 and 24.2°C in 2070 illustrated in Figure 21 (CSIRO and BoM, 2023). While in Tenterfield (Figure 22), the predicted increase is 24.3°C in 2050 and 25.7°C in 2070. These figures also present two historical 30-year periods (in purple) to allow comparison across time.

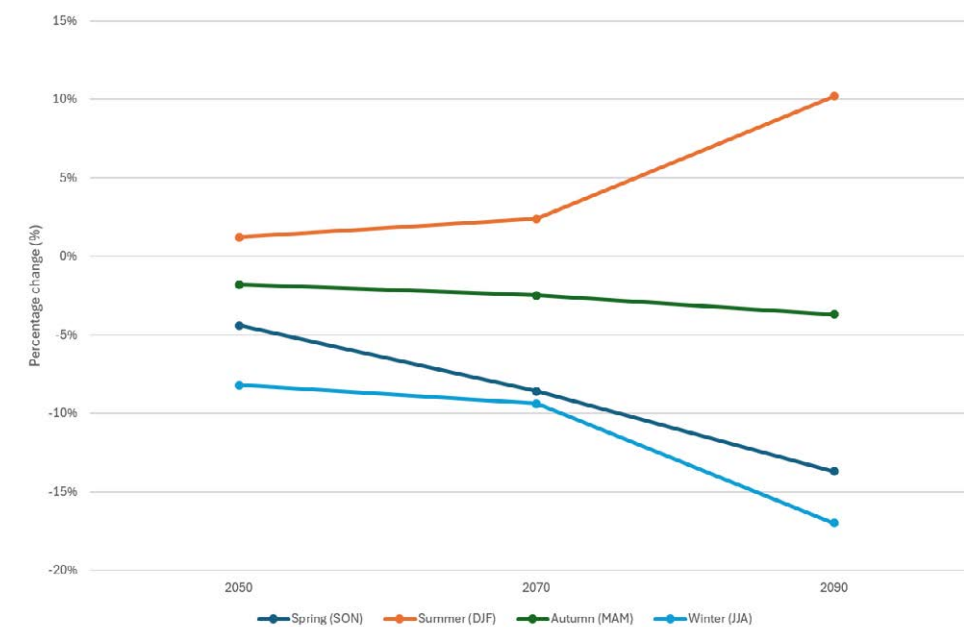
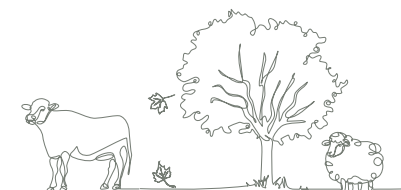


Figure 20 Seasonal changes (%) for rainfall under RCP 8.5 (Ekström et al., 2015)



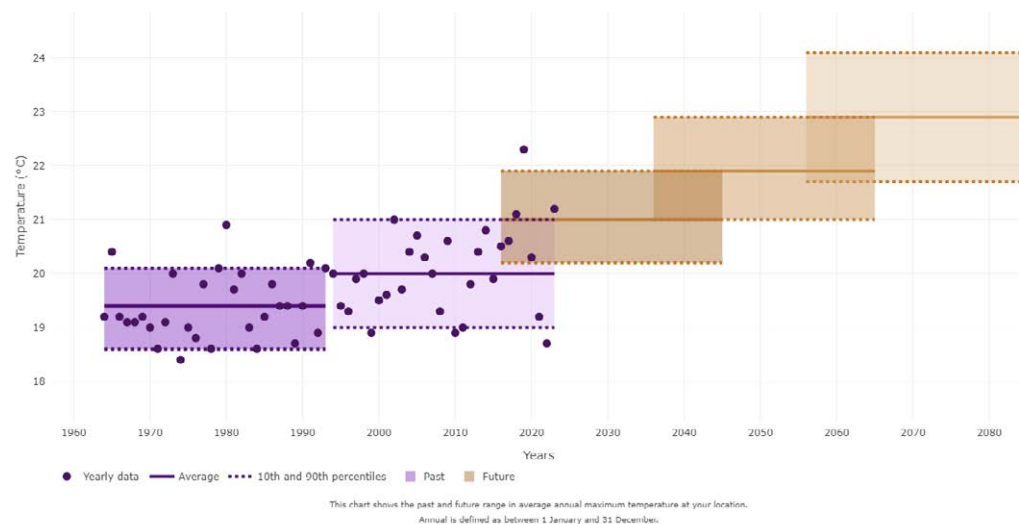


Figure 21 Change in average maximum temperature in Glen Innes Severn  
Future scenario represents RCP8.5 (My Climate View, CSIRO and BoM, 2023)

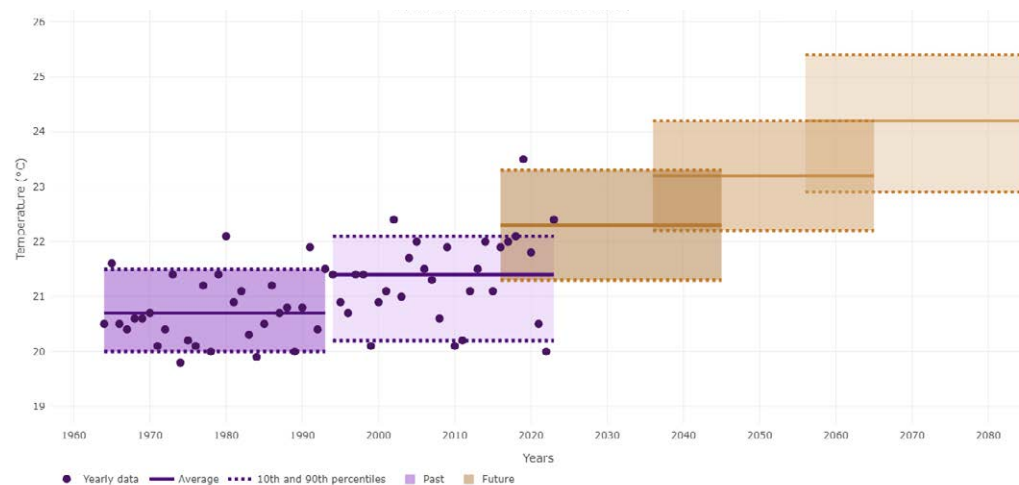
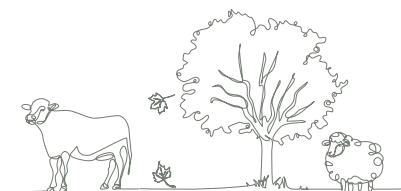


Figure 22 Change in average maximum temperature in Tenterfield  
Future scenario represents RCP8.5 (My Climate View, CSIRO and BoM, 2023)

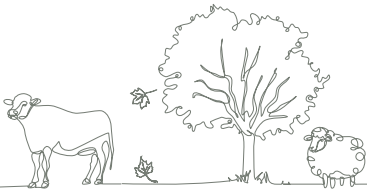


Critical drought indices

Utilising projections from CSIROs and BoMs Central Slopes Cluster report (Ekström et al., 2015), the Climate Change in Australia Technical Report (CSIRO, BoM, 2015), the My Climate View Tool (My Climate View, 2023), and Kirono et. al. (2020). A summary of the findings relating to critical drought indices are presented below.

|                                                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |
|-------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                  |  |  |  |  |
| Average temperature                                                                                               | Extreme temperature                                                               | Average rainfall                                                                    | Intense rainfall events                                                             | Evapotranspiration                                                                  |
| Average temperatures will continue to increase (by 3.0 to 5.4°C) across all seasons until the end of the century. | More hot days and warm spells are projected.                                      | Average winter rainfall is projected to decrease.                                   | High confidence that the intensity of heavy rainfall events will increase.          | Projections for potential evapotranspiration may increase in all seasons by 2090.   |

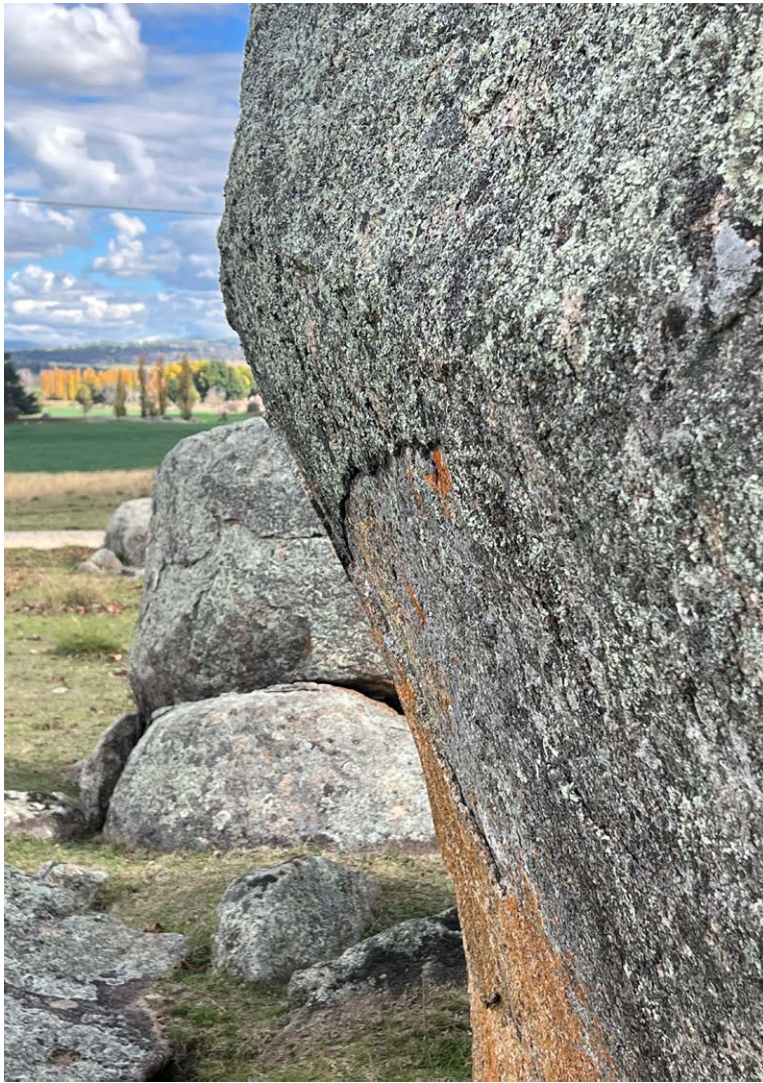
|                                                                                                      |                                                                                         |                                                                                     |                                                                                     |                                                                                                  |
|------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
|                     |        |  |  |               |
| Standardised Soil Moisture Index (SSMI)                                                              | Percent time spent in drought                                                           | Duration - drought and extreme drought duration                                     | Frequency - drought and extreme drought                                             | Intensity - drought and extreme drought                                                          |
| Decreasing soil moisture driven by the projected decrease in rainfall and higher evaporative demand. | There is medium confidence that the time spent in meteorological drought will increase. | Predicted increase for duration in extreme drought.                                 | The frequency of extreme drought will increase over the course of century.          | Australia will spend time more intense drought, particularly across southern and eastern states. |



The changes in key climate variables outlined above were considered in the context of impacts on cropping by GRDC to develop understanding of the vulnerabilities of the industry (Hayman, 2020). Table 4 outlines the impacts climate change may have on crops in the grain belt, so is a general reference and not specific to the Northern New England Highlands region.

| Change                                      | Vulnerability                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Increased mean temperature                  | Low vulnerability to warming over coming decades provided that grain growers have access to crops with appropriate development. Vulnerability to warmer seasons will be greatly increased if growing season rainfall was to decline, and warming is associated with heat waves.                                                                                                                                                                                                                                    |
| Changes to heatwave frequency and intensity | High vulnerability to an increase in spring heat events for all dryland winter crops but especially pulse crops. Spring heat events are more damaging when combined with low soil moisture. In cooler than normal Springs, Water Use Efficiency (WUE) tends to be higher than expected. This suggests moderate heat events might be imposing a cost in most years.                                                                                                                                                 |
| Changes to frost frequency and intensity    | Although there is less confidence on the likelihood, there is high vulnerability to any increase in frost severity and frequency for many parts of the grains belt. Agronomists working with frost affected farmers refer to both a direct cost of frost damage and an indirect psychological impact on decision making.                                                                                                                                                                                           |
| Changes to seasonal rainfall                | Very high vulnerability. Although grain growers are highly skilled at managing low rainfall environments, the ongoing profitability of enterprises relies on capturing good seasons and are strongly affected by drier seasons. In medium to higher rainfall parts of the grains belt, a substantial increase in drier than average growing seasons would greatly reduce confidence in management of input levels. Drier conditions would also reduce the amount of higher return and higher risk broadleaf crops. |
| Changes in the intensity of rainfall        | Low vulnerability. A modest increase in the intensity of rainfall will be beneficial. There are risks of water erosion, but these can be managed with stubble retention which has high levels of adoption and co-benefits of reducing wind and water erosion risk and increasing productivity.                                                                                                                                                                                                                     |
| Elevated levels of carbon dioxide           | Changes in CO <sub>2</sub> cannot be considered separately from temperature and water supply, and plant breeding advances cultivars suitable to present day conditions by default. In the future there is likely to be deliberate selection of varieties that respond more positively to elevated CO <sub>2</sub> . Monitoring of changes to pests and disease and revising nutrition will be essential.                                                                                                           |

Table 4 Components of climate change and commentary regarding increased mean temperature, exposure and changes to heatwaves, frost, rainfall, and carbon dioxide in the Australian grain belt (Hayman, 2020).



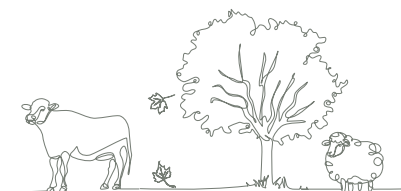
### 3.5. Drought related impacts

Section 1.5.2 of this Plan introduced regional resilience characteristics. Further drought impacts were identified through the literature reviewed as a part of the Plan development. This long list of drought impacts was then tested with stakeholder reference group members who rated the impacts on their community giving a priority ranking for each. This provided a customised view of impacts that affect the communities the most.

These impacts were then categorised into three components of social, economic and environmental. Considered together, these components form the foundations of drought resilience. It is important when considering impacts to note that droughts are difficult to predict in duration and severity and due to these differences, impacts differ between drought.

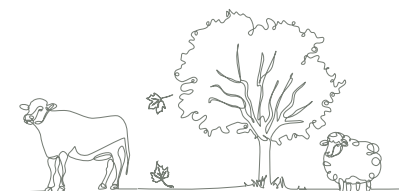
The key impacts to the region as advised through community consultation have been summarised below.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Social                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Economic                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Environment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <ul style="list-style-type: none"> <li>• Increased mental health struggles during drought periods.</li> <li>• Social stigma associated with resource scarcity, including water for personal hygiene.</li> <li>• Farmers experiencing isolation on their farms.</li> <li>• Rising community tensions due to competition for resources.</li> <li>• Prolonged recovery times from drought-related impacts.</li> <li>• Decreased community morale due to deteriorating countryside.</li> <li>• Decision-making paralysis with severe effects on livelihoods.</li> </ul> | <ul style="list-style-type: none"> <li>• Reduced agricultural viability and financial losses.</li> <li>• Decreased water availability and quality impacting economic activities.</li> <li>• Increased spending at rural produce shops.</li> <li>• Business closures impacting owners, employees, and the tourism sector.</li> <li>• Financial strain on families, limiting spending on education and recreation.</li> <li>• Population shifts to urban areas, particularly among farmers.</li> <li>• Unsustainable funding and loss of wages.</li> <li>• Reduced discretionary spending and increased cost of living.</li> </ul> | <ul style="list-style-type: none"> <li>• Decline in flora and fauna.</li> <li>• Adverse effects on aquatic systems and species.</li> <li>• Reduced biodiversity in the region.</li> <li>• Undergrazed landscapes becoming more prone to bushfires.</li> <li>• Gardens and trees dying from water restrictions and poor water quality.</li> <li>• Introduction of weeds through imported feed.</li> <li>• Damage to historical and heritage sites.</li> <li>• Overreliance on weather forecasts affecting environmental management.</li> <li>• Animal welfare concerns.</li> </ul> |



# 04

## Listening to Local Experience

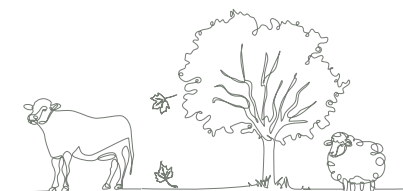
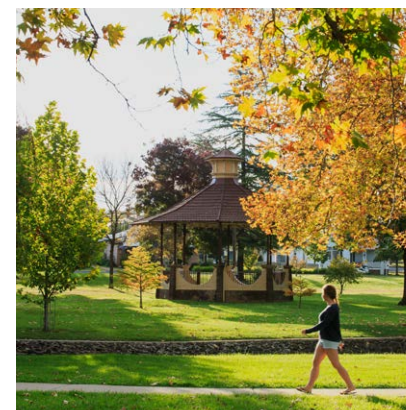


## 4. Building from local experience

The outcomes of this Plan are born from community voice, which will support locals in their journey towards drought resilience. As drought impacts every facet of regional communities, extending far beyond the farm gate.

### 4.1. Local stories of resilience

The communities of the Northern New England High Country have forged their own pathways to improve their resilience. The following case studies showcase community-led activities and initiatives across the LGAs. Some initiatives have been around for many years, while others have been set up more recently.



## Case study – Granite Borders Landcare Committee

Granite Borders Landcare Committee (GBLC) was established in response to the community's desire to coordinate Landcare activities across the Tenterfield and Stanthorpe districts. Prior to the GBLC's formation, Landcare groups in the region functioned independently. The need for a coordinated approach to natural resource management issues, knowledge sharing, and resource allocation became increasingly evident. The GBLC emerged as a response to this need, aiming to unify and empower the diverse Landcare groups within its designated area.

The GBLC functions as a central hub, empowering member Landcare groups through knowledge sharing and collaboration. They provide workshops, field days, and information sessions on regional natural resource management challenges, fostering the exchange of experiences and expertise. This unified approach strengthens their advocacy efforts, enabling them to effectively lobby for government support and policies promoting sustainable land management.

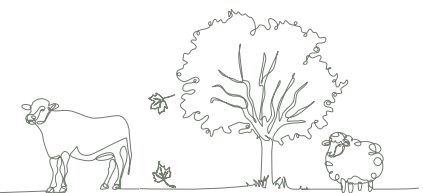
The GBLC workshop on drought proofing and climate forecasting offered a critical resource for regional landholders by featuring experts, the workshop addressed the challenges of water scarcity and unpredictable weather with practical solutions. One workshop provided insights on dam evaporation reduction techniques empowered participants to maximise water storage during wetter periods and minimise losses during droughts. This directly translates to improved water security for their land.

Complementing this, another session on climate models and forecasting tools equipped landholders to interpret seasonal outlooks. This newfound knowledge empowers them to make informed decisions about water management, planting schedules, and livestock management based on predicted conditions.

The workshop's significance lies in its focus on building resilience. By leveraging the expertise of established professionals, the workshop ensured participants received reliable and up-to-date information, crucial for effective decision-making in the face of drought and a changing climate. This approach empowers landholders to become proactive stewards of their resources, ensuring long-term sustainability for their land and livelihoods.

The GBLC's educational programs empower Landcare groups, fostering sustainable land management, community ownership, and securing funding for regional natural resource management initiatives. This benefits both the environment and local communities.

Source: Drought Proofing and Climate Forecasting ([graniteborderslandcare.com.au](http://graniteborderslandcare.com.au))



## Case study – ANGLICARE – Go Without for the Drought



Droughts in Australia have a devastating impact, not just on the environment and livelihoods, but also on the social fabric of communities. Anglicare recognised this, particularly in the Northern Inland regions, who are heavily reliant on agriculture. These droughts can lead to social isolation. People become withdrawn, routines were disrupted, and social activities declined.

Anglicare significantly contributes to the well-being of the communities with the Glen Innes Severn and Tenterfield LGAs. Their services encompass mental health support through the Employee Assistance Program, aged care navigation via the Care Finders program, and emergency relief in the form of food and financial assistance. This last aspect was particularly crucial during the recent drought, with initiatives like "Go without for the Drought" demonstrating their dedication to supporting residents in times of need.

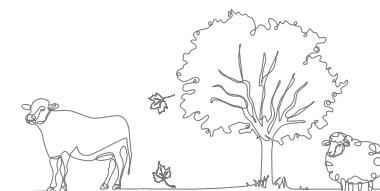
The Go Without for The Drought initiative, implemented by Anglicare, offered a strategic approach to building social resilience in the face of drought. This program fostered a sense of community spirit and empowered residents to navigate these challenges more effectively.

The initiative leveraged a unique element of Australian culture: coffee consumption. Participants were encouraged to voluntarily forgo a personal indulgence, such as their daily coffee, and donate the saved funds to support drought-stricken communities. This financial contribution provided much-needed assistance to those directly affected by the drought.

Beyond the financial benefit, 'Go Without for The Drought' cleverly utilised the concept of coffee as a symbol of social interaction. By giving up their own coffee, participants essentially provided a "gift" to drought-affected communities. This "gift" allowed residents to purchase coffee for a friend, thereby reviving social interaction and fostering a renewed sense of community spirit.

In essence, the program strengthens social bonds, which are crucial for communities to weather challenging times. By encouraging social interaction and rebuilding community spirit, Go Without for The Drought empowers communities to build resilience against drought and its associated social consequences. This initiative demonstrates a novel approach to drought mitigation, highlighting the importance of social cohesion in fostering long-term recovery.

Source: Go without for the drought – supporting communities in Northern Inland



## Case study – GLENRAC Smoko with Friends

The Glen Innes Natural Resources Advisory Committee Incorporated (GLENRAC) plays a crucial role in fostering community resilience in the face of challenges.

Historically, GLENRAC has adapted its focus to meet the evolving needs of the community. Recognising the impact of a severe drought in 2014, they shifted their focus towards building community capacity and social capital with initiatives like "Fit for Farmers" and "Rural Women's Day".

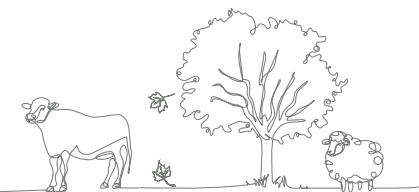
In 2019, GLENRAC received a grant from Glen Innes Severn Council which provided financial support to its community support efforts. A key activity in drought support was the creation and delivery of 'Smoko with Friends events, a short 1.5-hour event with morning tea held at localities across the district. These gatherings provided a platform for expert presentations on topics identified by local champions, fostering knowledge sharing and addressing critical needs. Importantly, this format has been adapted to address subsequent challenges, such as post-bushfire and flood recovery efforts.

The success of the "Smoko with Friends" program is evident, with 33 events hosted between March 2019 and March 2020, each attracting around 15 farmers and community members. Events were held in various localities around the district, planning these gatherings involved contacting local champions who identify topics of concern for the community. These topics often encompass production techniques, financial management, mental health support, and income assistance programs.

Building community trust is paramount for GLENRAC. They established a strong relationship with a number of key service providers including the Salvation Army, facilitating access to financial assistance for eligible families in a discreet manner. Additionally, they offered administration support to farm businesses to digitise documents and apply for financial support such as with the NSW Rural Assistance Authority, ensuring smooth collaboration and maximising financial aid opportunities for the community.

GLENRAC's commitment to employing local staff, facilitating access to resources, and fostering open communication through programs like "Smoko with Friends" demonstrates their dedication to building a strong and resilient rural community.

Source: Glencoe Hall SMOKO With Friends – GLENRAC



## Case study – Australian Celtic Festival



The annual Australian Celtic Festival is held over four days during the first week of May in Glen Innes at the National Celtic Monument of Australia, the Australian Standing Stones. The Festival celebrates Celtic heritage through music, dance, art, food and more. Each year a specific Celtic nation/s is highlighted offering a deep dive into its unique customs and traditions.

Alongside music and dance, the program includes official Celtic ceremonies, a street parade, re-enactment groups, Highlands games, Kirking of the Tartan, Friday night Ceilidh, Celtic Symposium, massed pipe bands, Celtic Cultural Awards and other entertainment and activities.

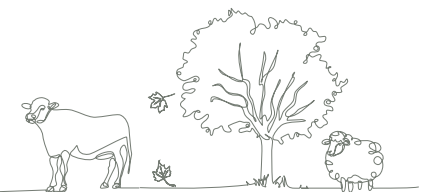
The festival is an exposition of Celtic artistic expression. Patrons are able to experience traditional music, featuring performances by pipers, drummers, and traditional Celtic musicians. Additionally, the festival stages presentations of Celtic dance, traditional visual arts and market stalls. A comprehensive array of visual arts, ranging from crafted pieces to storytelling to immersive cultural experiences.

This event not only celebrates cultural heritage, but also serves as a platform for local businesses and artisans to showcase their talents.

The Australian Celtic Festival, while celebrating Celtic heritage through music, dance, and food, contributes to the community's resilience in subtle yet significant ways. The festival is also a celebration of Australian Celtic Heritage and the contribution that those communities made during early settlement. By fostering a sense of belonging through shared cultural appreciation, it strengthens social connections, crucial for facing challenges together. The festival also preserves traditions, providing a sense of grounding during hardship. Additionally, the festival boosts local businesses, contributing substantially to our visitor economy, supporting those businesses during less profitable months or during extreme weather events that affect the lives of local's budgets. The festival uplifts spirits through its unique atmosphere and encourages community engagement to get involved, contributing to a more resilient community fabric.

The significance of the Australian Celtic Festival extends beyond its role as a cultural celebration. It fosters a robust sense of community by uniting individuals through a shared appreciation for Celtic heritage. This shared experience strengthens social bonds, promotes pride in their town, generates new opportunities and cultivates a supportive network, a cornerstone of a community's resilience in the face of adversity.

Source: Rhonda Bombell, Coordinator Economic Development and Tourism Place and Growth, Glen Innes Severn Council



## Case study – Tenterfield Lions Club Town Card Program

In the face of adversity during drought, the Tenterfield Lions Club refused to remain idle. This well-established community service organisation, renowned for its unwavering dedication to the town's well-being recognised the critical need for intervention. During the prolonged drought, the Tenterfield Lions Club supplied fodder, water, dog feed, and hampers to families throughout the Tenterfield LGA, supported by funds from other Lions Clubs and community groups across Australia.

The club recognised the urgent need to stimulate the local economy while providing essential support to struggling farmers. With this in mind, the club secured a grant of \$25,000 from the National Australia Bank that served as the seed capital for a Town Card Voucher Program.

The program operated simply but had a great impact. \$1,000 vouchers, designed to resemble credit cards, could be used at participating businesses within Tenterfield LGA resulting in a double benefit of injecting much-needed cash flow into the local economy and encouraging residents to patronise local establishments.

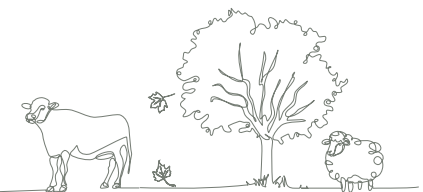
To ensure the vouchers reached the most vulnerable members of the community, the Lions Club collaborated with local stock and station agents with first-hand understanding of the farmers' struggles and identifying individuals most in need. This collaborative effort ensured vouchers reached the hands of those who could benefit most – the farmers desperately in need of resources to rebuild their livelihoods.

The Town Card Voucher Program achieved remarkable success. By encouraging residents to shop locally, the program offered a lifeline to struggling businesses. Injections of cash flow played a critical role in helping them remain open during a period of economic hardship, thereby preventing closures and safeguarding local jobs.

For the farmers, the vouchers provided much needed purchasing power, enabling them to acquire essential supplies, such as seeds, fertiliser, and fencing materials, to kickstart their recovery efforts. This crucial support helped them rebuild their farms and restore their livelihoods, fostering a sense of hope and perseverance within the community.

Tenterfield Lions Club's success story offers valuable lessons for communities facing similar challenges. By working in close partnership with local businesses and organisations, the club ensured its initiative targeted those who needed it the most. The story also emphasises the significance of grant funding. The National Australia Bank's grant provided the critical seed capital that enabled the Lions Club to translate their vision into a valuable support program.

The success highlights the importance of collaboration, adaptation, and grant funding in fostering resilience and paving the way for a brighter future, collectively.



## Case study – Glen Innes Show



The Glen Innes Show has been a pivotal part of the Glen Innes community for over 150 years and is considered to be of state heritage significance. The show is more than a cultural exhibition, it functions as an opportunity to build resilience within Glen Innes and surrounds.

The event has persevered through the variety of challenges, including period of intense drought, devastating floods and the variable market fluctuations. Their enduring success is manifested into livestock displays, and articulates that despite formidable challenges, they can be surmounted.

The Show is a platform for local farmers and producers to share their passion and dedication. The cattle pavilion display, sheep breeds and poultry farmers is a testament to the region's agricultural heritage. The Show also highlights local food and wine, allowing visitors to discover the unique flavours of the region.

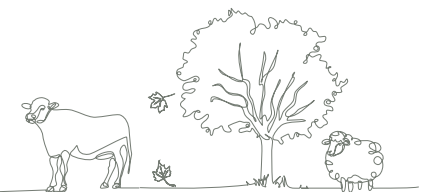
The Show provides an opportunity to bring together creativity and entertainment. Local artisans showcase their talents in the craft displays, from intricate woodwork to stunning textiles. The demolition derby provides a thrilling spectacle, while the mechanical pavilion offers a glimpse into the latest advancements in agricultural machinery.

The true nature of the Glen Innes Show lies in its ability to bring people together. It fosters a sense of community pride and belonging. Farmers connect with consumers, families gather for a fun-filled day out, and locals celebrate their shared identity. This sense of togetherness fosters resilience and provides a valuable support system, especially during times of hardship.

It embraces innovation and progress. Exhibits often showcase the latest technologies and ideas in agriculture, from sustainable farming practices to advanced machinery. This forward-thinking approach helps local farmers adapt to changing times and ensure the future success of the region's agricultural industry.

The Glen Innes Show is a powerful reminder of the strength and spirit of rural communities. It's a celebration of tradition, a showcase of innovation, and a testament to the enduring power of community spirit.

Source: Glen Innes Show



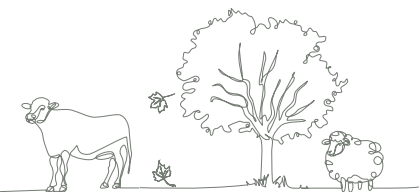
## Case study – Local Land Services – Northern Region Response

The 2018-2019 drought pushed farm businesses past their limits, forcing producers into very difficult decisions about their livelihoods. The extended dry spell stretched far beyond any reasonable planning horizon, leaving farmers with dwindling resources and a bleak outlook. Recognising the urgency of the situation, the NSW Department of Primary Industries joined forces with Northern Tablelands and North West Local Land Services to establish the Northern Drought Response Program.

The program's aim was twofold: safeguard animal welfare and ensure the long-term viability of farms in the drought-stricken regions. Animal welfare concerns were widespread. With limited feed, water, and on-farm cash flow, herds and flocks were increasingly at risk. The emotional toll was significant too, as many farmers succumbed to decision fatigue, unable to make even basic management choices for their farms.

The Northern Drought Response team tackled the crisis head-on. Taking a proactive approach, the team initiated a series of "cold calls" directly to farmers in these priority areas. These calls served a dual purpose: assess the severity of each farmer's situation and offer immediate support. Based on a triage assessment, farmers received targeted assistance, ranging from livestock feeding and nutrition advice to on-farm visits and referrals to drought support workers in the most critical cases. This personalised approach ensured farmers who were most at risk, received the specific help they needed.

The program's success hinged on its ability to scale up quickly. Due to the overwhelming demand for support, additional staff were rapidly trained in essential areas like nutrition and animal welfare. This surge in capacity allowed the program to reach a vast number of struggling farmers. By contacting more than 1,500 farmers across the priority drought-stricken areas, the Northern Drought Response Program provided a lifeline during a desperate time.



## 4.2. What we heard

The communities of Glen Innes Severn and Tenterfield LGAs are committed to building a resilient and prosperous future. The voices of the community echo their commitment to maintaining a thriving agricultural landscape, fostering interconnected communities, supporting diverse local businesses, and advancing critical infrastructure and governance. Table 6 provides a concise explanation of the feedback received during consultation.

### 4.2.1. Survey outcomes

The survey was open until 30 June 2024, there were 31 responses, 12 responses from Glen Innes Severn LGA and 14 from Tenterfield LGA with the remainder from surrounding LGAs. The current findings align with stakeholder group discussions and are explored in the LGA snapshots (refer 4.2.2. and 4.2.3). To delve deeper, four key questions have been identified and are presented in the figures below.

The results of question 6 in the survey demonstrate that drought resilience extends beyond the farm gate where our communities need to be resilient to survive and thrive, even during times of drought. Items were ranked in order of priority, by respondents who believe these priorities should receive funding to improve their community's drought resilience. Figure 23 shows that a secure water supply was the most important aspect of the survey according to respondents, followed by improved skills in agriculture, community education, preparedness programs and reliable assets and infrastructure.

Question 9 of the survey asked respondents to rank six outcomes in terms of effectiveness of local resilience building. Figure 24 shows 'investing in water conservation and efficiency' ranked highest. Each of the top three align closely with the outcomes in Figure 23 above.

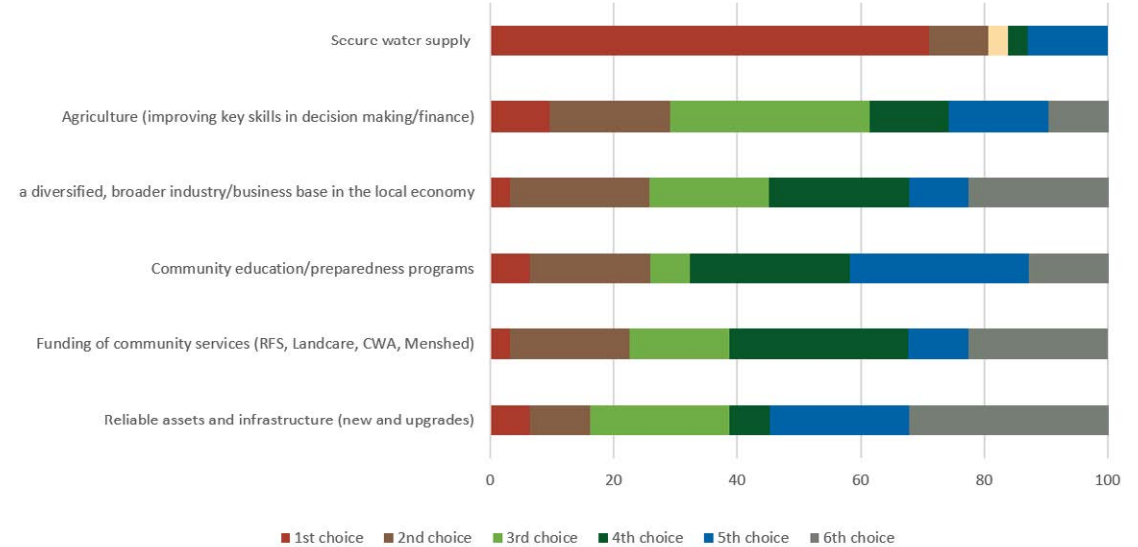


Figure 23 Survey question 5: Drought resilience extends beyond the farm gate where our communities need to be resilient to survive and thrive, even during times of drought. Rank items ranked in order of priority

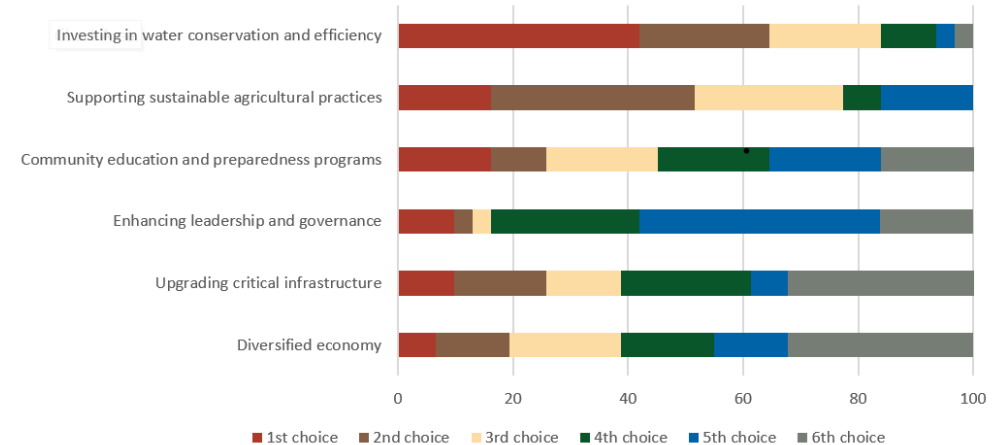


Figure 24 Survey question 9: Ranked from highest to lowest the outcomes respondents believed would be effective in building drought resilience for our region



The impacts outlined in Question 13 shows all respondents, but 1, felt increased stress was an impact of drought, refer to Figure 25.

Question 16 of the survey asked respondents which other economic areas should be considered when looking at a diversified economy. The visitor economy was overwhelmingly chosen as the most popular, as seen in Figure 26 below.

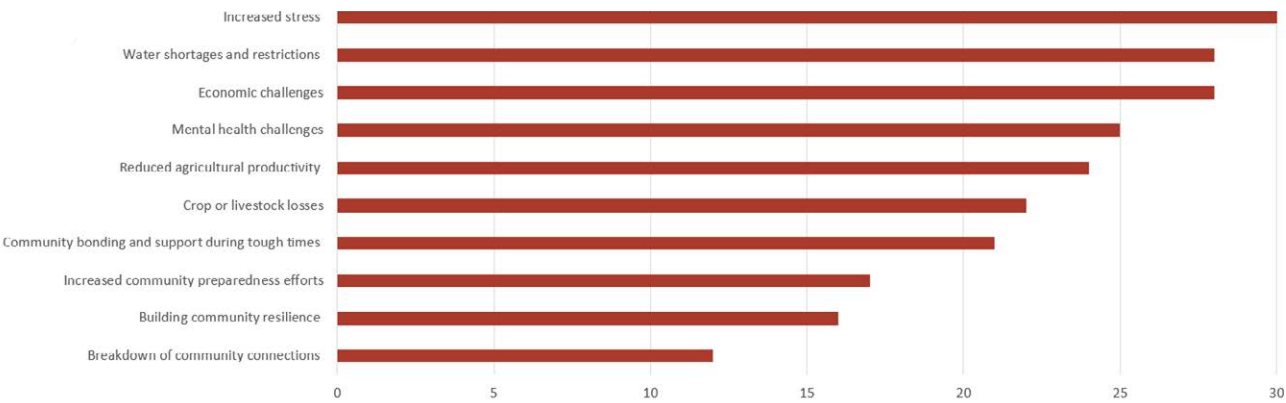


Figure 25 Survey question 13: Respondents personal experiences with drought, and how it impacted them and the community

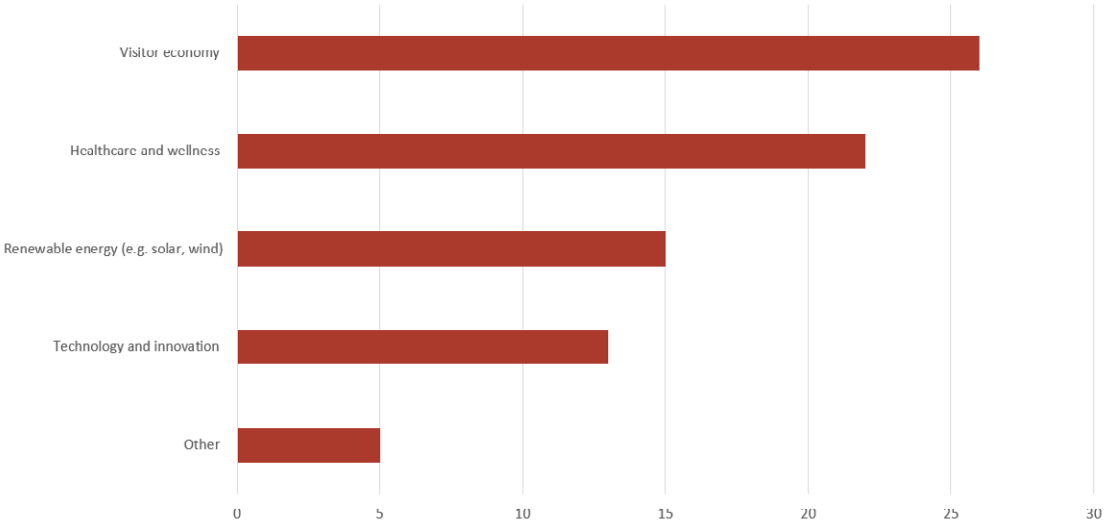
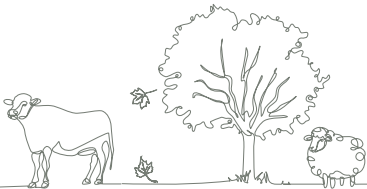


Figure 26 Survey question: 16: Specific industries or sectors which respondents considered best to investing in to diversify income sources



4.2.2. Glen Innes Severn LGA Snapshot

The community of Glen Innes Severn has a strong sense of resilience and pride, deeply connected to its agricultural heritage. Stakeholders highlighted the importance of economic diversification to reduce reliance on the agricultural industry, particularly during periods of drought. Mental health emerged as a core concern within the community, with stakeholders expressing a need to consistently provide mental health support services in and outside of drought. Stakeholders supported the work that has previously been done in the mental health space; with a large number of events and activities to encourage mental health support being done in the past. GLENRAC (Glen Innes Natural Resources Advisory Committee) was recognised for its role in building resilience within the community, providing valuable resources and support to help residents navigate the challenges of drought. Stakeholders also wanted to think of new and innovative ways to provide mental health support to avoid over saturation of events.

Outcomes of engagement described a need for improved connectivity (meaning physical infrastructure as well as telecommunication infrastructure), with better infrastructure seen as important to access better support services and enhance the region’s attractiveness to tourists, new businesses and residents. There was a clear desire for more coordinated efforts in drought preparedness, with a need for clearer, and more accessible information and support services required. Stakeholders from the LGA recognised that water resources were managed relatively well during the 2018–19 drought. However, they also emphasised the need to further improve water security to better prepare for future droughts and as essential steps for building resilience.

| What we heard                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Impacts of drought can be felt across many communities. Some of these impacts, confirmed through the stakeholder consultation, relevant to the Glen Innes Severn LGA included:                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <ul style="list-style-type: none"><li>• Increased mental health struggles during drought periods</li><li>• Inadequate phone and internet connectivity during emergencies</li><li>• The pressing need for improved water security</li><li>• Social stigma associated with resource scarcity, such as the inability to shower</li><li>• Rising community tensions due to competition for resources</li><li>• A pervasive sense of hopelessness</li><li>• Farmers experiencing isolation on their farms</li><li>• Business closures, negatively impacting owners, employees, and the tourism sector.</li></ul> | <ul style="list-style-type: none"><li>• Financial strain on families, limiting spending on education and recreation</li><li>• Social stigma of not having access to water for personal hygiene</li><li>• Population shifts to urban areas, particularly among farmers</li><li>• Decision-making paralysis with severe effects on livelihoods</li><li>• Prolonged recovery times from drought-related impacts</li><li>• Rural fire brigades using water for fire control, exacerbating water security issues.</li></ul> |



### 4.2.3. Tenterfield Shire LGA Snapshot

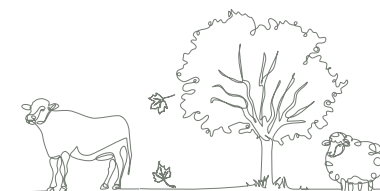
The community of Tenterfield reflected a deep connection to the land and a shared determination to enhance its drought resilience. Stakeholders spoke passionately about the need for economic diversification to strengthen the local economy against the impacts of drought, especially through tourism even through drought. Stakeholders highlighted the importance of mental health support, with many acknowledging the psychological strain that drought puts on individuals and families. Access to mental health services and community support networks were frequently mentioned as critical needs, with some mentioning during drought there are often social breakdowns within a family during drought and social stigma (i.e. not having the capacity to maintain personal hygiene). Stakeholders also identified the value green space has on mental health during drought, with some suggesting drought-tolerant plants and using recycled water initiatives to keep these areas thriving.

Stakeholders also highlighted the importance of improved digital connectivity and infrastructure to support emergency responses, business opportunity and everyday – underlining a broad desire for better access to resources and services. Stakeholders noted during drought that Councils had been proactive with initiatives to encourage residents to conserve water. They also noted that improved infrastructure, better resource allocation, and innovative water conservation techniques were needed to safeguard against future droughts.

#### What we heard

**Impacts of drought can be felt across many communities. Some of these impacts, confirmed through the stakeholder consultation, relevant to the Tenterfield LGA included:**

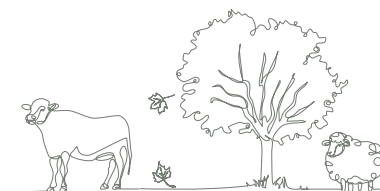
- |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Decline in flora and fauna</li> <li>• Adverse effects on aquatic systems and species</li> <li>• Reduced biodiversity in the region</li> <li>• Increased dust, causing asthma and fevers</li> <li>• Overgrazed landscapes becoming more prone to bushfires</li> <li>• Decreased community morale due to deteriorating countryside</li> <li>• Gardens dying from water restrictions</li> <li>• Poor water quality following droughts and fires</li> <li>• Trees on shallow soils dying</li> <li>• Introduction of weeds through imported feed</li> <li>• Restrictive government regulations on fire permits and land clearing</li> <li>• Decreased water availability and quality</li> <li>• Reduced agricultural viability and financial losses</li> <li>• Challenges in restocking after destocking</li> <li>• Unpredictable and decreased stock prices, complicating restocking efforts</li> <li>• Heavy impacts on tourism reliant on natural attractions</li> <li>• Increased spending at rural produce shops</li> <li>• Challenges in restocking after destocking.</li> </ul> | <ul style="list-style-type: none"> <li>• Unpredictable and decreased stock prices, complicating restocking efforts</li> <li>• Heavy impacts on tourism reliant on natural attractions</li> <li>• Increased spending at rural produce shops</li> <li>• Unsustainable funding and loss of wages</li> <li>• Cash flow issues reducing local economic activity</li> <li>• Reduced discretionary spending</li> <li>• Increased cost of living and fewer employment opportunities</li> <li>• Damage to historical and heritage sites</li> <li>• Loss of livestock and declining land values</li> <li>• Animal welfare concerns</li> <li>• Overreliance on weather forecasts</li> <li>• Rising addiction rates</li> <li>• Children missing out on socialising and sports due to financial constraints</li> <li>• Impact on education and family fatigue</li> <li>• Mental health issues, including stress from seeing livestock in poor condition</li> <li>• Reduced water availability for personal use</li> <li>• Family breakdowns and poor communication</li> <li>• Fatigue and reluctance to leave farms due to ongoing duties</li> <li>• Declining town pride as green spaces suffer.</li> </ul> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



## 4.3. Key themes

Consultation was undertaken in the Glen Innes Severn and Tenterfield LGAs which provided clear insights into how previous droughts had impacted the community and the issues faced. The main comments are presented in alignment with the key themes in Table 5 below.

| Key themes                                                                                                                                          | Responses                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Community</b><br><b>Empowered and resilient communities</b><br> | <ul style="list-style-type: none"> <li>Local clubs and social initiatives play a pivotal role in fostering community wellbeing and cultural cohesion.</li> <li>Mental health support is critical, especially for men who are often reluctant to seek support.</li> <li>Community events can provide social support and reduce isolation.</li> <li>Psychological support helps build resilience for individuals.</li> <li>The idea of building community capacity to face drought highlights the importance of empowering local residents.</li> <li>Community events and get-togethers, like those hosted by GLENRAC, Anglicare and the Salvation Army, help redress isolation and support mental health.</li> <li>The average age of farmers is going up; younger farmers are becoming fewer in the region.</li> <li>During drought, community members and farmers are often forced to take risks which can financially impact business, family and general livelihood</li> <li>Graziers and farmers do not prepare well for drought.</li> <li>More opportunities for First Nations Advisory Committee and Council to work together.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Economy</b><br><b>Strong and innovative economy</b><br>         | <ul style="list-style-type: none"> <li>Investment in industries beyond agriculture and support for local markets is a priority for growing the local economy and building resilience into the system.</li> <li>Economic initiatives aimed at countering the slow decline of smaller townships and villages by investing in smaller communities appropriately are valued by community.</li> <li>Infrastructure, healthcare, educational facilities, and tourism development are important components of a resilient regional economy.</li> <li>Initiatives like the Rail Trail in Glen Innes Severn LGA, which aims to turn an old rail line into a tourist attraction, can provide a boost to the local economy and create new opportunities.</li> <li>Supporting local businesses during droughts is crucial. For instance, financial town cards that can be used at local businesses within the region could play a vital role in helping the local economy.</li> <li>Tourism can be further developed to support economic resilience. Developing 'drought-based tourism' could have potential, where activities, attractions and events take place even through drought.</li> <li>There is a strong community spirit, as evidenced by significant fundraising efforts during crises, showing potential for community-driven economic initiatives.</li> <li>The New England Renewable Energy Zone (REZ), specifically in Glen Innes Severn LGA, is expected to create additional opportunities for renewable energy production, attracting people to the region and potentially fostering new industries due to improved energy sources.</li> <li>Enhancing the economic profiling of Glen Innes Severn and Tenterfield LGAs could be advantageous, particularly by emphasising attractions for visitors to explore.</li> <li>There is an opportunity to develop an activation hub between the railway precincts of Wallangarra and Jennings.</li> <li>The Angry Bull Trails project (an extensive mountain bike trail) will build 174 kilometres of mountain bike trails all within 15 kilometres of Tenterfield. It is expected this will attract at least 35,000 visitors annually to the Tenterfield LGA.</li> </ul> |



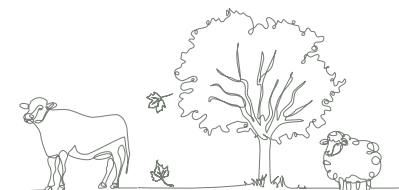
| Key themes                                                                                                                                                      | Responses                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Environment</b><br><b>Healthy, sustainable and thriving environment</b><br> | <ul style="list-style-type: none"> <li>• Access to water and maintaining water security is essential for continued agricultural success.</li> <li>• Clear funding processes and long-term planning are seen as critical for maintaining agricultural prosperity.</li> <li>• There's a need for better communication with urban residents about water conservation practices.</li> <li>• Strategic placement of large water tanks and developing a network for water distribution could help manage water supply during droughts and reduce bushfire risks.</li> <li>• During the recent drought, water and time were the most limiting factors.</li> <li>• Current laws allow rural fire brigades and their officers to take water from a water source to extinguish or control a fire without a licence, even during a drought.</li> <li>• A range of feasibility studies to assess better water management techniques could be highly beneficial.</li> </ul>                                                                                                                                                                                                                                                                                                           |
| <b>Governance</b><br><b>Transparent and inclusive leadership</b><br>           | <ul style="list-style-type: none"> <li>• Simplifying funding applications and better community engagement are seen as ways to make support more accessible during droughts.</li> <li>• Active involvement from the local Council and clearer communication processes are essential during drought and is viewed as an essential step to building better trust between local government and the community. This could include community input on water management and tourism development – key steps involve local stakeholders in decision-making processes.</li> <li>• The community recognises the importance of working together, both among themselves and with local government and external organisations and businesses. This collaboration can lead to transformative changes and improved access to resources, which is crucial to build resilience.</li> <li>• There is a need for better governance around water restrictions to ensure fair distribution between towns and farms.</li> <li>• There are different state government drought assistance programs for farmers in Queensland to farmers in NSW.</li> <li>• Funding applications can be difficult for farmers who aren't as computer savvy because applications are mostly now online.</li> </ul> |
| <b>Infrastructure</b><br><b>Robust and adaptive infrastructure</b><br>        | <ul style="list-style-type: none"> <li>• There is a desire for long-term quality in infrastructure.</li> <li>• Water reservoirs, recycled water, and efficient infrastructure are key considerations for both water security and sustainability. Enhancements to water capture and storage were advocated for.</li> <li>• Improving connectivity is vital. Poor internet and communication infrastructure hinder emergency responses and economic development.</li> <li>• Developing a strategic network of water tanks and ensuring independent power sources for pumps can significantly improve infrastructure resilience.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

Table 5 Key themes and findings from community engagement

Considering these insights, the Glen Innes Severn and Tenterfield communities' vision for the future revolves around improving water management, a diversified, resilient economy, improving and promoting the region's tourism opportunities, additional educational initiatives, and building stronger community bonds. By addressing these key areas, the region can work toward securing its agricultural prosperity, nurturing community wellbeing, and fostering economic resilience, ultimately creating a more sustainable and vibrant future for all residents.

This feedback collectively conveys a community working to secure its agricultural prosperity, deepen social bonds, and broaden economic horizons to ensure its long-term resilience in the face of drought and other challenges.

The feedback also highlights a forward-looking community that desires improvements in built infrastructure and technology. The shift towards online engagement following COVID-19 was acknowledged, suggesting an openness to technological advancements.



## 4.4. Initiatives refinement

Following community consultation, the ideas and initiatives from both the literature and consultation were collated into a long list.

The investment logic used included:

1. problem statement
2. key questions
3. assessment
4. validation.

### 4.4.1. Problem Statement

Regional economies will continue to be impacted by droughts, which are forecast to become more frequent and more severe. Drought Resilience Plans are required to identify the steps which communities should take to mitigate these impacts.

Drought Resilience Plans should be developed by small consortia of local governments working together so they are actionable and relevant to individual communities - provided smaller, regional councils are given the money and staff to take on this responsibility and the on-going work that was once done by State government agriculture/regional departments. This shifting of responsibility needs to be formally recognised and adequately funded to ensure practical, value-for-money outcomes.

### 4.4.2. Key Questions

- Impact: How is Glen Innes Severn and Tenterfield LGAs impacted by Drought? Which impacts are most acute?
- Actions: What actions or initiatives can provide support to build the region's drought resilience? Which of the actions deliver the greatest benefit to the region?
- Concept: What is the anticipated scope of the identified action?
- Benefit: How will the region benefit?
- Prioritise: How well do the actions address the three pillars of resilience? How feasible is the action and is there a level of shovel-readiness? Do Councils have the capacity / influence to undertake the action?

### 4.4.3. Assessment

Through the SRG, the topmost severe drought impacts under each theme were confirmed and rated as low, medium or high impact to their respective LGAs. Each idea and initiative (potential actions) were coded with this information. A score relating to the relative level of Council influence, benefit to the community and the feasibility of implementation (how shovel-ready the idea was) was given. In this way, each initiative had a score to prioritise the ideas.

Initiatives were considered where the benefit of the action was high, and Councils have the greatest level of influence (Figure 27).

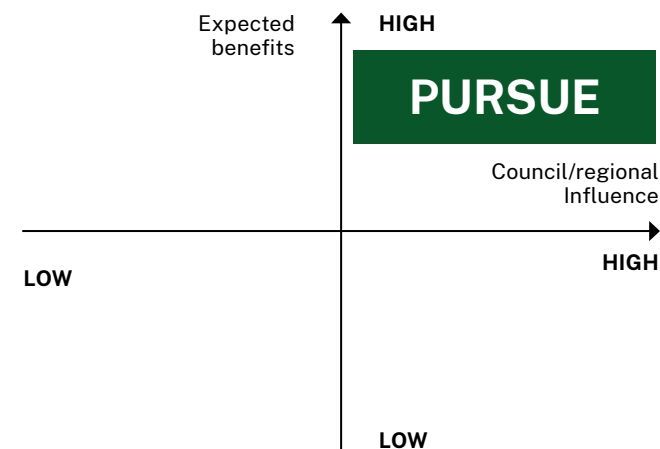


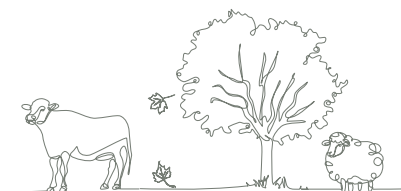
Figure 27 Assessment matrix

### 4.4.4. Validation

Following initial assessment, a number of questions were considered to further refine the initiatives and prioritise them.

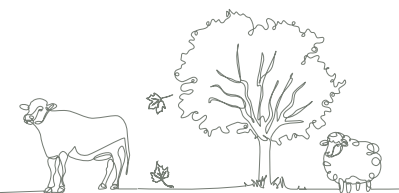
- Does the identified action/initiative align with Councils' general strategic direction?
- Beneficiaries – what are, and who receives, the expected benefits of the action?
- Ease of implementation – is there a need for significant regulatory, political or legal changes?
- Timeliness – How long will the action take to complete?
- Financial – Is there funding available and what is the cost, including transactional costs? What is the source of funding and who will pay?

The SRG was involved in validating the assessment and prioritised actions.



# 05

## Drought Resilience Actions



# 5. Drought Resilience Actions

## 5.1. What has already been done to build drought resilience

Natural hazards including droughts are all too familiar to the communities in the Glen Innes Severn and Tenterfield LGAs. A collaborative and inclusive approach is required to mitigate the challenges of drought and subsequent impacts.

Glen Innes Severn Council and Tenterfield Shire Council have been working with the Federal and State Government to improve regional water security.

- Glen Innes Severn Council, working with Water NSW has sourced a back-up groundwater supply at Eerindi Ponds which will be used should the town supply run dry during drought. Council is also committed to replacing outdated manual-read water meters with new, automatic devices called 'smart meters' to better manage water infrastructure to ensure long term sustainable outcomes.
- Tenterfield Shire Council has secured its water supply with the installation of several bores. A \$9.64 million water treatment/filtration plant has also recently been constructed with capacity to treat bore water should the town need to switch to an alternative source when Tenterfield Dam is low during drought.
- Funding through various other government agencies is assisting with the delivery of resilience programs to manage risks associated with drought.

- Rural Financial Counselling Service Northern Region (RFCS) NSW offers financial counselling and guidance to primary producers and other rural business who are experiencing, or at risk of experiencing financial hardship including during times of drought.
- Northern Tablelands LLS have established a farm business resilience program to assist farmers, managers and their employees build resilience by learning to manage risk, adapt to changing climate and improve their business' economic, environmental, and social sustainability.

Local individuals and not-for-profit community groups have started and developed programs to meet the challenges of drought. These include the Border Rivers Regional Water Strategy (2022), North Coast Regional Water Strategy (2022) and the New England Northwest Enabling Regional Adaptation Report (OEH, 2017). These are in addition to Council drought management plans, Local Land Services and the Department of Primary Industries' resources – all key reports providing a framework for the development and sustainability of the region.

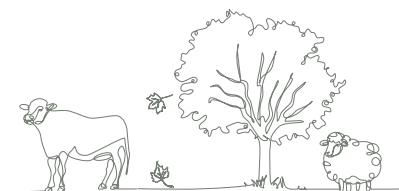
The following sub-sections describe the opportunities to identify and test current and potential actions to progress, arranged by five themes (refer to Figure 9)

The need, the action and the expected outcomes are provided, along with how these contribute to building resilience and the parties responsible for action(s). Additional details regarding assumptions and metrics to measure progress towards these actions are provided in this section.

## 5.2. Opportunities tested

From the consultation process a long list of ideas was compiled from the community on how impacts of past droughts had been lessened and what had potential to lessen impacts in future droughts. The long list includes of absorptive, adaptive and transformational resilience actions, tested through the co-design process, is presented in Table 6 below.

This Plan seeks to capitalise on this previous work and ideas and support actions that will benefit the broader region.



## 5.3. Priority actions

To refine our long list of opportunities to test, we gathered feedback during the first round of Stakeholder To meet the objectives of the Plan, actions have been developed under the five themes (with accompanying sub-themes) identified throughout this Plan.

Through the SRG's and one to one meeting with stakeholders' data was gathered on:

### 1. What was working well to respond to drought,

### 2. What was not working well, and

### 3. What needed to change.

This process helped to identify and focus the idea development on existing measures that the community valued, those interventions that didn't support resilience and those that existed and either needed to be changed because a component of the system wasn't working or there is a need that isn't being met e.g. there is drought information available however the gap/missing element is that there was a lack of awareness about where to find this information therefore how can the plan address this gap.

The pathways to increasing resilience are based on the community response in identifying their highest vulnerabilities to drought, their greatest source of 'pain' or where they have identified that the market is failing. This community voice is echoed in the regional data highlighted in section 2 of this Plan.

The actions have been characterised as absorptive, adaptive and transformative. Achieving a level of resilience will be determined by many factors including the ability to influence behaviour change and participate in resilience initiatives. Meaning that actions can have differing levels of impact depending on the level of uptake by the individual.

A range of resilience levels are indicated across several actions where they level of uptake of the activity can be variable an example of this could be extension focused on improving soil quality and pest management. Participants will learn practical skills to implement adaptive change in their businesses, preparing them for future droughts. Some will integrate these skills directly, while others may benefit more from broader extension programs or complementary initiatives that offer a transformative impact. Much of this variance in resilience levels is down to addressing the barriers to change.

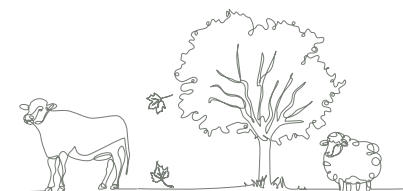
**Actions have been categorised as absorptive where an intervention is likely to reduce the impact of drought. This assumes that current resilience levels are maintained and through extension of the activity a greater number of community members can participate.**

**Actions are classified as adaptive where the activity supports system modification or change that if adopted will increase overall responsiveness to drought through better preparedness and planning.**

**Transformative change is identified where there is a complete redesign of the system.**

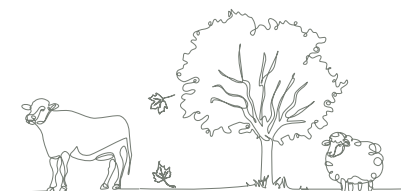
Each theme provides a detailed need for the resilience action, specific and prioritised actions, the resilience frameworks that applies to each theme or sub-theme and the delivery model that includes a lead agency and potential partners.

The Plan actions have been discussed with some delivery partners to canvas their willingness to lead and support the implementation of this Plan. Many of these responses were provided on a local level and signified a real desire to make changes for the benefit of the region's communities. Further acceptance testing would be required to gain complete consensus with the State and Commonwealth Government and delivery partners where significant resources and funding are identified.



|                                                                                     | Theme                 | Opportunities identified during engagement                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------------------------------------------------------------------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <b>Economic</b>       | <b>1.</b> Look for initiatives to support local businesses during drought: Initiatives to support families impacted by drought, including providing financial assistance, social gatherings, and mental health support through \$500 town cards for residents to use within the town (specific businesses) to help local businesses and the economy (RAA - Link).                                                             |
|    | <b>Infrastructure</b> | <b>2.</b> Increasing use of residential water tanks – promotion of and further flexibility in Council regulations to facilitate the installation of larger water tanks on properties.                                                                                                                                                                                                                                         |
|    | <b>Infrastructure</b> | <b>3.</b> Exploration of more strategic water storage networks - possible network of large water tanks strategically placed throughout the region.                                                                                                                                                                                                                                                                            |
|    | <b>Governance</b>     | <b>4.</b> Addressing water restrictions and improving communication about water conservation measures to urban residents and new arrivals in regional towns. This could include education campaigns to prevent fire hazards during drought conditions, targeting both new and existing residents.                                                                                                                             |
|    | <b>Community</b>      | <b>5.</b> Increased focus on mental health support services and awareness campaigns during drought periods. Not just for farmers, but for the entire community. Initiatives such as GLENRACs 'Smoko with Friends' or Anglicare's 'Go without for the drought'.                                                                                                                                                                |
|    | <b>Economic</b>       | <b>6.</b> Emphasising tourism as an economic diversification strategy during drought, including promoting and/or improvement of local attractions, walks, wildlife, and implementing projects like the rail trail.                                                                                                                                                                                                            |
|    | <b>Environment</b>    | <b>7.</b> Explore the opportunity to incentivise water security initiatives in the region.                                                                                                                                                                                                                                                                                                                                    |
|    | <b>Infrastructure</b> | <b>8.</b> Local Councils continue to seek further funding for emergency battery back-ups for connectivity during emergency situations.                                                                                                                                                                                                                                                                                        |
|    | <b>Governance</b>     | <b>9.</b> Allocate funding for diversification of industries to maintain the attractiveness for people to relocate to the area.                                                                                                                                                                                                                                                                                               |
|   | <b>Infrastructure</b> | <b>10.</b> Establish a Council rebate scheme for water efficient infrastructure in homes and businesses (such as water tanks, efficient taps, toilets, shower heads, air conditioning units, dishwashers, washing machines etc).                                                                                                                                                                                              |
|  | <b>Community</b>      | <b>11.</b> Community wellbeing is boosted during drought through the maintenance of a well-kept and flourishing townscape whereby being able to see green sporting fields is important for mental health of the community and for children. They are also important to maintain social bonds though recreation activities. This may be an opportunity for recycled water or larger water storage facilities for this purpose. |
|  | <b>Economic</b>       | <b>12.</b> There is an opportunity to boost the local economy by attracting more travellers and encouraging overnight stays. By promoting and providing amenities and attractions, these towns can become preferred stopover points for tourists and those traveling between New South Wales and Queensland. This could also include upgrading essential infrastructure, such as EV Charging Stations.                        |
|  | <b>Governance</b>     | <b>13.</b> Establishing a strategic community education program on water management during drought catering to individuals of all ages and abilities. This program could include practical demonstrations and guidance on methods such as collecting and reusing water from washing machines for gardening purposes, Along with the creation of demonstrational videos to illustrate these techniques effectively.            |

Table 6 Long list of opportunities tested during the co-design process with SRGs



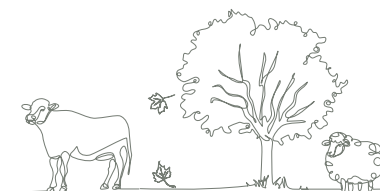
## 5.4. Theory of Change

The FDF aims to enhance the public good by building drought resilience in Australia's agricultural sector, the agricultural landscape, and communities (DAWE, 2020). This RDRP has incorporated the three types of resilience (environment, social and economic) into each of the drought resilience actions considered as part of the process.

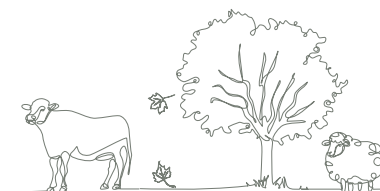
The theory of change used in this RDRP to investigate the ways in which economic, environmental and social resilience can contribute to the Northern New England High Country vision for drought resilience is outlined in Table 9 below. Using the FDF model (DAWE, 2020), the table provides a more explicit theory of change demonstrating the link between each step in the process.

To recap, the Plan's vision is **“Our vision is a Northern New England High Country community that is resilient to drought through being connected, having a strong social fabric, grounded in tradition and adaptive to change. A region that balances prosperity and environmental stewardship to maintain and develop a strong community and diverse economy for future generations.”** and defines the current state of the Region's resilience and what needs to change.

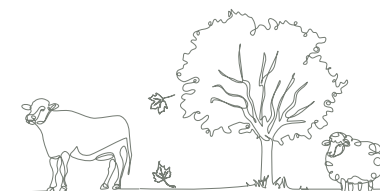
| If (you do this)                                                                                                                             | Then                                                                                                                                                                                                                             | Has the impact of                                                                                       | To create transformational change                                                                             | Contributes to the vision                                                                                                                |
|----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Economic Resilience                                                                                                                          |                                                                                                                                                                                                                                  |                                                                                                         |                                                                                                               |                                                                                                                                          |
| If there is more drought resilient Research, Development, Extension and Adoption and new technologies are developed and made more accessible | Then more primary producers will adopt new technologies and production techniques that allow them to better respond to drought.<br><br>Then there is increased ability to businesses to prepare, plan for drought.               | Promoting regional businesses that are self-reliant, productive, innovative and profitable.             | Healthy diversified businesses and industry that interact with and contribute to a complex and wider economy. | Communities that is resilient to drought through being connected, strong in social fabric, grounded in tradition and adaptive to change. |
| If there is greater access and awareness of data information and early warning indicators for businesses and communities                     | Then there is an increased ability for businesses and communities to manage and assess risk and install timely interventions.                                                                                                    | Providing varied regional employment opportunities that meet the needs of the region and its residents. |                                                                                                               | That balances prosperity, environmental stewardship and develop a strong community and diverse economy for future generations.           |
| If businesses within the community have increased awareness and access to business planning and risk management expertise                    | The businesses will be better prepared to manage, respond and recover from drought reducing the financial exposure to drought.                                                                                                   |                                                                                                         |                                                                                                               |                                                                                                                                          |
| If communities can diversify their economies to include industries that provide greater sources of income.                                   | Then there will be less reliance on agriculture, providing more diverse employment opportunities, filling labour shortages, creating more diverse communities that are more able to withstand the economic pressures of drought. |                                                                                                         |                                                                                                               |                                                                                                                                          |



| If (you do this)                                                                                                                                                                                    | Then                                                                                                                   | Has the impact of                                                            | To create transformational change                                                                                                                                             | Contributes to the vision |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| Environmental resilience                                                                                                                                                                            |                                                                                                                        |                                                                              |                                                                                                                                                                               |                           |
| If local governments, businesses and communities are better able to understand their natural capital and increased awareness of best practice techniques                                            | Then they will better manage natural resources through improved landscapes which produce better environmental outcomes | Regional landscapes that are healthy, sustainable and functioning.           | Environmental management is connected across landscapes with communities, governments, primary producers and other stakeholders creating diverse systems that are responsive. |                           |
| If governments are better able to manage water resources through new and innovative practices, appropriate infrastructure and increased collaboration and information sharing.                      | Then they can reduce the impacts of drought and produce better environmental outcomes.                                 | Regional infrastructure that is reliable and fit for future community needs. |                                                                                                                                                                               |                           |
| If governments are better able to manage and develop reliable and appropriate climate adapted infrastructure through new and innovative practices, increased collaboration and information sharing. | Then councils can reduce climate vulnerable assets and provide better environmental outcomes.                          |                                                                              |                                                                                                                                                                               |                           |
| If governments and communities are better able to share information and gain knowledge on innovative environmental practices.                                                                       | Then communities will be more self-empowered to manage their own natural resources.                                    |                                                                              |                                                                                                                                                                               |                           |



| If (you do this)                                                                                                                                                                   | Then                                                                                                                                                  | Has the impact of                                              | To create transformational change                                                                                                                       | Contributes to the vision |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| Social Resilience                                                                                                                                                                  |                                                                                                                                                       |                                                                |                                                                                                                                                         |                           |
| If community leaders exercise their leadership skills confidently and if community members participate in social and professional community networks and interagency partnerships. | Then there will be greater connectedness, purpose and stronger social capital that supports drought planning and efforts to increase resilience.      | Communities that are resourceful, adaptable and thriving.      | Communities that respond to drought cohesively and effectively drawing on the social capital, collective preparedness and inclusive community networks. |                           |
| If information and knowledge on drought preparation and planning is shared in communities and led by community leaders.                                                            | Then there will be greater planning and preparedness for drought in new and innovative ways.                                                          |                                                                |                                                                                                                                                         |                           |
| If community leaders understand who forms the basis of their communities and can incorporate this knowledge into their development of services and infrastructure.                 | Then services and infrastructure are adapted to suit those most vulnerable to drought and changing climate conditions                                 | Communities that are inclusive and whose needs are understood. |                                                                                                                                                         |                           |
| If community leaders can improve the access to mental health services and communities can improve their awareness of the importance of good mental health.                         | Then there can better management of the risk factors of mental health and increased utilisation of services which can produce better health outcomes. | Communities that are connected and healthy.                    |                                                                                                                                                         |                           |
| If communities can improve collaboration, knowledge sharing education and training opportunities.                                                                                  | Then there will be greater connectedness, purpose and stronger social capital that supports drought planning and efforts to increase resilience.      |                                                                |                                                                                                                                                         |                           |



**Theme:** Empowered and Resilient Communities

**Action:** Strengthening regional health and wellbeing (Adaptive)



## Insights from consultation and the need

Natural disasters can push the psychological boundaries of individuals and their communities. The region suffered through the last drought, which was then followed by the 2019-2020 severe bushfires, flooding and the Covid-19 pandemic. While the drought tested the region's communities, farmers, and local businesses, local organisations, community groups gathered to support those in need through grant and non-grant funded initiatives, programs and events. Consultation indicated that drought had a significant impact on farmers and the broader community. Rural communities face unique challenges to mental wellbeing, especially considering the prevalence of mental health issues among farmers. Stakeholders indicated previous research by the National Farmers' Federation suggests nearly half of all Australian farmers have felt depressed in recent years; almost two-thirds have experienced anxiety and close to half have considered self-harm or suicide.

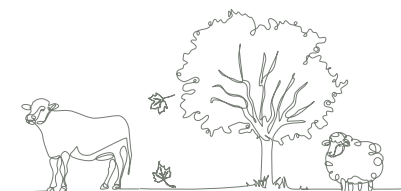
Stakeholders noted some farmers often struggled to discuss their mental health. Despite the challenges, a number of organisations and groups, in partnership with Council, implemented several initiatives and programs to help those whose mental health was suffering. Initiatives such as GLENRAC's 'Smoko with Friends', Local Land Services Northern Region Response and Anglicare's 'Go without for the Drought' all demonstrated signs of a resilient community working to strengthen regional health and wellbeing.

Key stakeholders advised that hosting social events was an effective way to encourage farmers to leave their farms and bring the family out to connect with friends and community. It was evident that social events were innovative ways to 'keep an eye out' for farmers and business owners doing it tough, including the Northern Drought Response cold-calling initiative and programs where trained mental health professions lent a hand on farm to minimise social stigma of seeking health were beneficial. Well supported community members are better placed to endure the shocks of drought. By supporting mental health services and volunteers to reduce burnout and fatigue, the community will be better placed to endure adverse events and recover from hardship.

## Implementation actions

1. Increase focus on mental health support services and awareness campaigns during drought periods, ensuring farmers, business owners, and community members have access to essential resources and information. These services will be structured to suit a range of individual circumstances, such as offering evening events for farmers.
2. Develop mental health services that meet the needs of the community and are accessible in a range of formats (delivered both formally and informally). This could include innovative approaches like Local Land Services or Rural Financial Counselling Service cold calling farmers and local business owners to inquire about their well-being and offer assistance as needed.

3. Explore options to use existing facilities such as saleyards as a community hub for agriculture-related education sessions and potentially generate income as an events facility.
4. Investing in programs and upskilling volunteers to provide mental health support while engaging in practical on-site tasks, e.g., "Farm Army", can enhance productivity and well-being.
5. Facilitate the delivery both formal and information training event opportunities to support an improved understanding of mental health and wellbeing across both LGA's; collaborate with existing community groups and government agencies to ensure effective communication of existing programs and services available to residents of Northern New England; support small scale events to build social capital in rural and remote areas of the each LGA e.g. Smoko with Friends; community hall BBQ's.



## Pillars of resilience

### Social

- Advocate for mental health services delivered through various mediums to reach all community members effectively, promoting resilience and well-being.
- Implement innovative initiatives to proactively support community members, business owners and farmers' mental health, promoting community solidarity and reducing stigma associated with seeking help.

### Economic

- Community with strong wellbeing are responsive to events and have a quicker level of recovery.
- Investing in programs and upskilling volunteers like 'Farm Army' to provide mental health support while engaging in practical on-site tasks, enhancing productivity and well-being.

### Environment

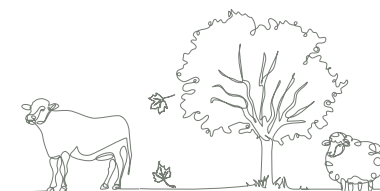
- Increases community knowledge and ability to respond to drought.
- Increased community awareness of water efficiency practices, fostering a sense of responsibility and active participation.

## Delivery model

|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Lead agency</b>       | <ul style="list-style-type: none"> <li>• Rural Aid</li> </ul>                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Delivery partners</b> | <ul style="list-style-type: none"> <li>• GLENRAC</li> <li>• Granite Borders Landcare Committee (GBLC)</li> <li>• Local Land Services (LLS)</li> <li>• Rural Financial Counselling Service (RFCS)</li> <li>• The Salvation Army</li> <li>• Tenterfield Lions Club</li> <li>• Rural Financial Council Service</li> <li>• The Southern Queensland and Northern NSW Innovation Hub</li> <li>• Rural Fire Service Association</li> </ul> |
| <b>Timeframes</b>        | <ul style="list-style-type: none"> <li>• Immediate and direct engagement in 2024</li> <li>• 6 months</li> </ul>                                                                                                                                                                                                                                                                                                                     |
| <b>Cost estimates</b>    | <ul style="list-style-type: none"> <li>• \$50k - \$100k</li> </ul>                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Financial options</b> | <ul style="list-style-type: none"> <li>• FDF/FRRR Funding</li> <li>• Drought Resilience Enabling Activities Fund</li> <li>• Mental Health Branch of the NSW Ministry of Health</li> </ul>                                                                                                                                                                                                                                           |

## Key outcomes

- Enhanced social cohesion and connectivity through community engagement initiatives and events.
- Greater exposure of community groups and support agencies who are active in mental health services.
- Build a community responsive to natural disasters.
- Increased local resources to prepare, respond, and recover from drought and its impacts.



**Theme:** Empowered and Resilient Communities

**Action:** Nurturing green spaces for community benefit (Adaptive)



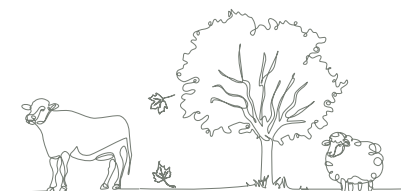
## Insights from consultation and the need

Well-maintained green spaces, both open and recreational, are highly valued by a community - serving as essential areas for relaxation, recreation, and social interaction. During consultation, residents emphasised the vital role green spaces play in maintaining mental health and overall well-being, particularly in times of drought. Stakeholders highlighted the impact dying landscapes can have on a community and the significant impact access to green spaces has on community. The desire for maintained green spaces during dry periods was a recurrent theme, with suggestions to implement drought-tolerant vegetation and recycled water systems as potential solutions.

These actions not only enhance the aesthetic and environmental resilience of local areas but also provide mental health benefits by offering residents a place for relaxation and social interaction. Maintaining vibrant, green spaces can support the mental well-being of the community and foster a more resilient and cohesive region.

## Implementation actions

1. Implement initiatives to plant drought-tolerant native vegetation, enhancing local green spaces resilience and biodiversity. This will provide communities with thriving landscapes even during dry periods, promoting mental health and overall well-being.
2. Implement recycled water initiatives to maintain specific community green spaces during drought. By using recycled water systems such as greywater recycling, these areas can remain lush and vibrant, providing a crucial mental health refuge for residents. This ensures that even in times of water scarcity, there are dedicated green spaces available for community use, promoting well-being and stress relief.



Pillars of resilience

Social

- Maintaining green spaces during drought provides a refuge for relaxation and recreation, which is essential for community mental well-being.
- Accessible green spaces serve as gathering points, promoting social interactions and strengthening community bonds.
- Thriving landscapes improve the overall living environment, contributing to a higher quality of life for residents.

Economic

- Vibrant green spaces can attract visitors, boosting local tourism and supporting small businesses.
- Use of recycled water sustainable and cost efficient.

Environment

- Prioritising the sustainable maintenance of green spaces will enhance landscapes for community use and benefit.

Delivery model

|                   |                                                                                                                                                                                                                                                                                                                                  |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Lead agency       | <ul style="list-style-type: none"><li>• Glen Innes Severn Council</li><li>• Tenterfield Shire Council</li></ul>                                                                                                                                                                                                                  |
| Delivery partners | <ul style="list-style-type: none"><li>• GLENRAC</li><li>• Granite Borders Landcare (GBLC)</li><li>• Local Land Services (LLS)</li><li>• Glen Innes Local Aboriginal Land Council</li><li>• Moombahlene Local Aboriginal Land Council</li><li>• The Salvation Army</li><li>• Tenterfield Lions Club</li><li>• Anglicare</li></ul> |
| Timeframes        | <ul style="list-style-type: none"><li>• Immediate and direct engagement in 2024</li><li>• &lt;6 months</li></ul>                                                                                                                                                                                                                 |
| Cost estimates    | <ul style="list-style-type: none"><li>• \$50k – \$100k</li></ul>                                                                                                                                                                                                                                                                 |
| Financial options | <ul style="list-style-type: none"><li>• Council funded</li></ul>                                                                                                                                                                                                                                                                 |

Key outcomes

- Enhanced mental and physical well-being among community members able to access preserved and enhanced green spaces.
- Improved ecological health and resilience of green spaces.
- Increased tourist activity as a result of the region's preserved green spaces; contributing to the local economy through spending in hospitality, retail, and tourism services.





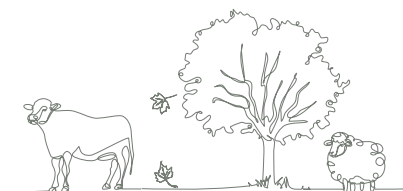
## Insights from consultation and the need

Supporting regional local businesses during times of drought is vital to sustain the region's economy. The lack of disposable income during times of drought significantly impacts the local economy, often causing farmers and businesses to suffer. Consultation with key stakeholders revealed farmers and business owners can be caught off guard by the slow nature of drought onset and its lack of a defined start. Previous efforts, such as the distribution of \$500 town cards to farmers during the 2018-2019 drought, led by the Tenterfield Lions Club, helped support local businesses and farmers.

While agricultural is the leading industry in the region, it is important to reduce dependency on single sectors. Stakeholders emphasised the importance of off-farm income as well as tourism during drought to support economic resilience. The New England REZ, although not extending north to cover the Tenterfield LGA, still presents employment generating opportunities to attract renewable energy business to the southern parts of region.

## Implementation actions

1. Explore feasibility of a town card program to support farmers and small business owners during drought. This could be in the form of a digital money card to be used by the community to stimulate the local economy and sustain services. Clear eligibility criteria would ensure cards reach those most in need.
2. Explore potential to value-add to existing local industry and business, possibly with investors/ venture capital in association with the New England REZ.
3. Develop a holistic interactive program that enables participants to learn how to complete market research, develop feasibility on ideas, plan and implement a new business enterprise. This would be delivered through networking events, face-to-face workshops, and industry exploration tours. The program will seek to increase business literacy skills and to create a network of like-minded entrepreneurs across the region.
4. Glen Innes and Tenterfield Chambers of Commerce engage with local businesses to provide support and guidance prior to drought. Provide assistance preparing/reviewing business plans to effectively respond to drought conditions.
5. Promote existing government initiatives that offer financial support and incentives specifically for new entrants to agriculture to become drought ready, with support of rural organisations and non-for-profit groups.
6. Support Glen Innes Severn Council's continued commitment to the Coalition of Renewable Energy Mayors (CoREM) to leverage the future 1.5% of REZ and advise Tenterfield Shire Council on potential regional impacts.
7. Promote the importance of supporting local business and regional tourism attractions to sustain local communities during drought.



## Pillars of resilience

### Social

- Encouraging local spending and tourism fosters stronger connections within the community, promoting social cohesion.
- Improved amenities and increased local engagement contribute to better mental health and a sense of belonging.
- Local initiatives and support mechanisms boost community and business' involvement, knowledge and pride.

### Economic

- Financial support and tourism development stimulate economic activity, helping businesses thrive.
- Providing consistent local spending create a more resilient economic environment.
- Support for local businesses attract new investments and economic opportunities.
- Financial support for new entrants to the agriculture sector.

### Environment

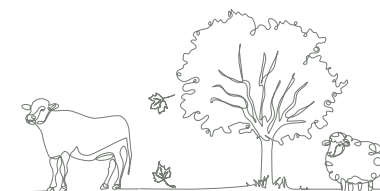
- N/A.

## Delivery model

|                          |                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                       |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Lead agency</b>       | <ul style="list-style-type: none"> <li>• Glen Innes Severn Council</li> <li>• Tenterfield Shire Council</li> </ul>                                                                                                                                             |                                                                                                                                                                                                                       |
| <b>Delivery partners</b> | <ul style="list-style-type: none"> <li>• Department of Primary Industries and Regional Development (DPIRD)</li> <li>• Local Land Services (LLS)</li> <li>• Glen Innes Business Chambers</li> <li>• Tenterfield Business Chambers</li> <li>• GLENRAC</li> </ul> | <ul style="list-style-type: none"> <li>• Anglicare</li> <li>• Granite Borders Landcare Committee (GBLC)</li> <li>• Tenterfield Lions Club</li> <li>• Rural Aid</li> <li>• Rural Assistance Authority (RAA)</li> </ul> |
| <b>Timeframes</b>        | <ul style="list-style-type: none"> <li>• 12 months – 2 years</li> </ul>                                                                                                                                                                                        |                                                                                                                                                                                                                       |
| <b>Cost estimates</b>    | <ul style="list-style-type: none"> <li>• ~250K</li> </ul>                                                                                                                                                                                                      |                                                                                                                                                                                                                       |
| <b>Financial options</b> | <ul style="list-style-type: none"> <li>• Council funded</li> </ul>                                                                                                                                                                                             |                                                                                                                                                                                                                       |

### Key outcomes

- Stimulated local economy, providing direct financial support to businesses and community members during droughts.
- Enhanced economic diversity and growth by exploring opportunities to value-add to existing industries and businesses, leveraging potential investments that may aligned with the New England REZ.
- Improved business preparedness and resilience to drought impacts through professional advice and support, ensuring business plans incorporate effective drought response strategies, assisting local businesses and farmers against economic downturns.
- Enhanced resilience of new entrants to agriculture against drought and other challenges.





## Insights from consultation and the need

Economic diversity is important to sustain regional resilience, particularly as over-reliance on a single sector, particularly the agriculture industry, can pose significant challenges during periods of drought. Stakeholders highlighted the importance of economic diversification to fortify the region against the impacts of recurring droughts and other challenges. Engagement outcomes saw a need to bolster tourism as a resilience strategy, advocating for initiatives that promote drought-resistant tourism activities and enhance attractions like cultural heritage sites, mountain biking trails (including the Angry Bull Trails and proposed Rail Trail), and adventure tourism. There was strong desire for funds to be allocated to improve infrastructure and marketing efforts aimed at attracting visitors year-round, supporting the regional economy.

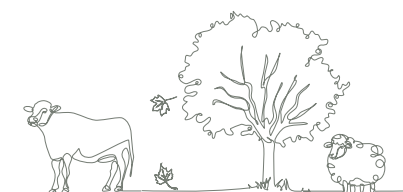
Recognition there was opportunity to diversify agricultural practices such as agribusiness and agritourism (note this is what was presented at the GLENRAC night) to generate new local and regional industries.

Investing in cross-border activation hubs was also suggested. This included the proposed development of the Wallangarra and Jennings railway precinct to encourage travellers to explore the region. Enhancing facilities and amenities is seen as pivotal in boosting local tourism and economic activity. Moreover, developing a comprehensive strategy to promote relocation, living, and working in the region, similar to successful campaigns elsewhere, was underscored as essential to attract new residents and businesses.

This would also include infrastructure investments, including RV-friendly facilities, additional EV fast chargers, and enhancements to accommodations and attractions to position Glen Innes Severn and Tenterfield LGAs as travel and stop-over destinations.

## Implementation actions

1. Emphasising tourism as an economic diversification strategy during and outside of drought, promoting drought-resistant tourism activities, enhancing attractions that remain viable regardless of drought conditions, such as cultural heritage sites, mountain biking trails (including the Angry Bull Trails and proposed rail trail), and adventure tourism. Allocate funds to improve infrastructure and marketing efforts to attract visitors year-round, supporting the regional economy.
2. Invest in cross-border activation hubs, such as the proposed Wallangarra/Jennings rail precinct, to encourage travellers between New South Wales and Queensland to stop and explore the region. Enhance facilities and amenities at these hubs to boost local tourism and economic activity.
3. Develop and invest in a comprehensive strategy to promote relocating, living, and working in the region, similar to the 'West is Best' campaign for Western NSW. Highlight the region's unique lifestyle, economic opportunities, and supportive community to attract new residents and businesses.
4. Invest in infrastructure to position Glen Innes Severn and Tenterfield LGAs as key destinations, including enhancing RV-friendly facilities, installing EV fast chargers, and improving hotels and attractions. Advocate for and promote these amenities to attract visitors and boost the regional economy.
5. Support development of agribusiness opportunities that encompass both farming and farming-related commerce including production, processing, marketing and distribution of agricultural related products. This diversification of agriculture has the capacity to support local communities in and out of drought affected periods enhance local economic growth.



## Pillars of resilience

### Social

- Diversified economic activities, such as jobs, tourism and new businesses which create a vibrant community atmosphere and improve quality of life.
- Promoting the region's unique attractions and lifestyle fosters a strong sense of place and pride among residents.
- Diversification initiatives attract a diverse population, leading to more cultural and social interactions within the community.

### Economic

- Diversifying economic activities reduces reliance on any single industry, making the local economy more robust and adaptable to change.
- Promoting new industries and tourism opportunities draws investments and stimulates economic growth.
- Economic diversification generates new employment opportunities, supporting workforce development and reducing unemployment.

### Environment

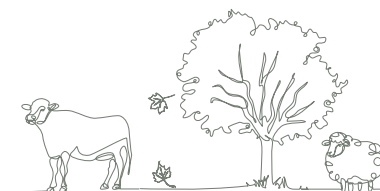
- Healthy, productive soils and rivers are maintained through collaboration with State and Federal Government, local agriculture, and Landcare agencies, ensuring sustainable farming practices and minimising drought impacts.
- Enhanced cooperation with the National Parks and Wildlife Service (NPWS) results in well-managed park upgrades and closures during droughts, protecting local flora and fauna while supporting regional tourism.

## Delivery model

|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Lead agency</b>       | <ul style="list-style-type: none"> <li>• Glen Innes Severn Council</li> <li>• Tenterfield Shire Council</li> </ul>                                                                                                                                                                                                                                                                                                                                                |
| <b>Delivery partners</b> | <ul style="list-style-type: none"> <li>• Department of Primary Industries and Regional Development (DPIRD)</li> <li>• Destination NSW</li> <li>• Regional Development Australia (RDA) – Northern Inland</li> <li>• Glen Innes Business Chambers</li> <li>• Tenterfield Business Chambers</li> <li>• GLENRAC</li> <li>• Anglicare</li> <li>• Granite Borders Landcare Committee (GBLC)</li> <li>• Tenterfield Lions Club</li> <li>• Rural Financial Aid</li> </ul> |
| <b>Timeframes</b>        | <ul style="list-style-type: none"> <li>• 12 months – 2 years</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Cost estimates</b>    | <ul style="list-style-type: none"> <li>• \$150k – \$500k</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Financial options</b> | <ul style="list-style-type: none"> <li>• FDF / FRRR Funding. Alternate funding sources would need to be secured for ongoing support</li> <li>• Department of Infrastructure, transport, regional development and the arts – Growing Regions Program – Round 2</li> </ul>                                                                                                                                                                                          |

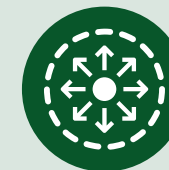
## Key outcomes

- Increased visitor number and tourism revenue through better promotion of drought-resistant activities and attractions, reducing dependency on single sectors.
- Strengthened local economy through improved infrastructure and amenities at cross-border activation hubs, facilitating increased tourism and economic activity.
- Growth in population and business relocation through better promotion of the region's lifestyle, economic opportunities, and community support.
- Better regional infrastructure, leading to improved visitor experience and extended stays.
- Strengthened regional identity and brand recognition, positioning Glen Innes Severn and Tenterfield LGAs as desirable destinations for residents, visitors, and investors through infrastructure investments and marketing efforts.



**Theme:** Healthy, Sustainable and Thriving Environment

**Action:** Regional water security (Transformative)



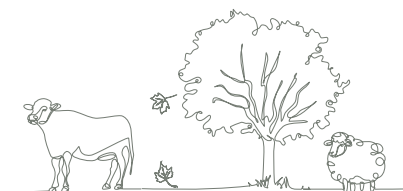
## Insights from consultation and the need

Ensuring a high level of water security is essential for the sustainability and resilience of the region, particularly given the recurring challenges posed by drought. The past drought and subsequent bushfires severely tested the region's water security, highlighting the need for adaptive change to deal with future challenges. Water was identified as the scarcest resource in the 2018-2019 drought for local townships and rural residences. Community consultation emphasised the need for improved water management and preparedness.

Key stakeholders recognised the importance of implementing proactive measures. These included better education on water efficiency and early implementation of water restrictions. There was also solid support for better coordination among various groups to streamline drought resilience efforts and a clear desire for better access to information on water security for both new and existing residents, including for individuals transporting their own water during drought. Suggestions including investing in water efficiency improvements and infrastructure, including exploring solutions to increase water storage capacity. Overall, stakeholders wanted enhanced local capacity to respond to drought and ensuring well-informed decision-making to mitigate drought impacts through better coordination of drought resilience activities to improve social resilience and preparedness.

## Implementation actions

1. Increase water sustainability and security education and communication within the community including showcasing local businesses which have adopted water efficiency measures. This includes community engagement and educational program to increase awareness, knowledge, and skills to conserve water.
2. Update Councils' respective 'Drought Management Plans' to initiate level 1 water restrictions earlier.
3. Invest in drought management workshops tailored to producers and key community stakeholders to improve resilience and preparedness. This could include educational campaigns to prevent fire hazards during drought conditions, targeting both new and existing residents.
4. Better coordination of stakeholders and community groups to strengthen drought resilience activities and responses.
5. Invest in developing comprehensive information packs for councils to distribute to new and existing residents, focusing on water security practices, efficiency tips, and responsible fire management during droughts.
6. Improve access and understanding of resilience research, encouraging the potential to deliver improved environmental outcomes.



## Pillars of resilience

### Social

- N/A.

### Economic

- Provides timely connection to information and financial resources that can support the region's agriculture and industry, reducing the economic impact of drought.
- Stimulates local economy by showcasing businesses that have adopted water efficiency measures, encouraging broader adoption and promoting sustainable practices.

### Environment

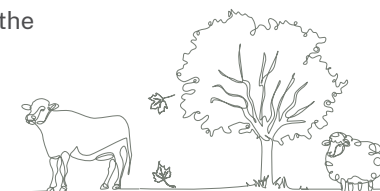
- Encourage conservation practices through updated 'Drought Management Plans'.
- Promoted biodiversity and ecosystem health through responsible water use and management practices, supported by community-driven initiatives and stakeholder coordination.

## Delivery model

|                          |                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                        |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Lead agency</b>       | • GLENRAC                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                        |
| <b>Delivery partners</b> | <ul style="list-style-type: none"> <li>• Department of Primary Industries and Regional Development (DPIRD)</li> <li>• Local Land Services (LLS)</li> <li>• Glen Innes Severn Council</li> <li>• Tenterfield Shire Council</li> <li>• Granite Borders Landcare Committee (GBLC)</li> </ul> | <ul style="list-style-type: none"> <li>• Glen Innes Local Aboriginal Land Council</li> <li>• Moombahlene Local Aboriginal Land Council</li> <li>• NSW Farmers Federation</li> <li>• Local Agricultural Service Providers</li> <li>• The Southern Queensland and Northern NSW Innovation Hub</li> </ul> |
| <b>Timeframes</b>        | • 6 – 12 months                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                        |
| <b>Cost estimates</b>    | • \$150k – \$500k                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                        |
| <b>Financial options</b> | <ul style="list-style-type: none"> <li>• FDF/FRRR Funding</li> <li>• Drought Resilience Adoption and Innovation Hubs – Southern QLD and Northern NSW Drought Resilience Adoption and Innovation Hub</li> </ul>                                                                            | <ul style="list-style-type: none"> <li>• Australian Government's Off-farm Efficiency Program initiative to upgrade water infrastructure to reduce water losses</li> <li>• Town Water Risk Reduction Scheme</li> <li>• National Water Grid Fund</li> </ul>                                              |

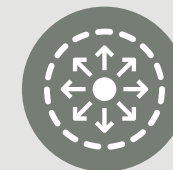
## Key outcomes

- Community is better informed, leading to more timely decisions that reduce the impacts of drought.
- Improved community awareness and adoption of water efficiency measures.
- Timely implementation of water restrictions to conserve resources during droughts.
- Enhanced community readiness and resilience through educational programs and workshops.
- Strengthened coordination among stakeholders for more effective drought resilience.
- Increased adoption of responsible water and fire management practices.
- Stimulated local economy through government-supported rebate programs.
- Tailored drought preparedness strategies addressing local needs and priorities.
- Enhanced water storage capacity and security through feasibility studies for weir development.
- Improved environmental sustainability and resilience to climate variability.
- Planning and management practices assist in reducing community impact on the natural environment and protect biodiversity.



**Theme:** Transparent and Inclusive Leadership

**Action:** Building effective Leadership through knowledge sharing and connectivity (Transformative)



## Insights from consultation and the need

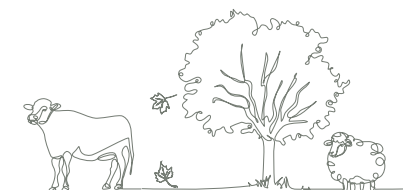
Effective leadership, supported by knowledge sharing and strong connectivity, is essential during times of disaster to ensure coordinated responses and resilient community support systems. To support succession in community and business leadership, the region needs to enhance leadership capacity in the next generation of leaders; to encourage community cohesion and a sense of identity.

Achieving long-term sustainability and resilience in a region requires a comprehensive approach informed by extensive community engagement. Stakeholders emphasised the need for economic diversification to reduce dependence on specific industries, especially during environmental challenges like drought. This includes securing funding to promote new economic opportunities alongside existing sectors, fostering a dynamic and resilient local economy.

Stakeholders highlighted the importance of improving readiness and response strategies for drought conditions. Key initiatives include establishing knowledge hubs to facilitate access to support services. There was also a clear call to improve digital infrastructure, vital not only for emergency responses but also for attracting businesses, residents, and tourists. There was also an identified need for agricultural education and events to enhance drought preparedness and response strategies. These insights reflect the essential components needed to cultivate a sustainable, connected, and resilient community prepared to tackle future challenges effectively.

## Implementation actions

1. Secure funding to support the diversification of industries within the region, aiming to maintain and enhance its attractiveness for potential residents and businesses. This initiative will focus on developing and promoting new economic opportunities that can thrive alongside traditional sectors, ensuring a resilient and dynamic local economy.
2. Host a program; potentially two cohorts, to develop leadership skills among youth (18-25 years) and early career leaders from various industries. The program would include mentorship, peer networking events, and training in time management, communication, team management, safety and meeting Industrial Relations requirements.
3. Form a dedicated working group focused on community drought preparedness, comprising representatives from local business, agricultural organisations, community groups, and other relevant stakeholders. This group will meet every six months to review climate change conditions, share knowledge, and coordinate strategies and actions to enhance regional resilience and response efforts. More frequent meetings to occur when moving into drought. Encourage an ongoing forum to mitigate and manage drought.
4. Support a DPIRD centralised coordination hub that connects farmers and the wider community with essential information for drought preparedness, services, and resources during drought. This hub should serve as a go-to point for both service providers and community members, ensuring efficient distribution of information and access to both financial and non-financial support. It could also include databases of research, AI support chat, case studies, funding opportunities, and practical guides. It should be user-friendly and accessible to all members of the community.
5. Collaborate with local councils, agricultural organisations, and community groups to create a comprehensive database identifying the regions stakeholders, including farmers, business owners, and residents. This database could be used for partnering organisations to facilitate early identification of drought impacts, mental health assessments, and streamline coordination of support efforts.
6. Support and help build the network of community connectors, encourage place-based work and explore how to incorporate more First Nations roles within the region.



## Pillars of resilience

### Social

- Improved access to essential information and resources through a centralised coordination hub and stakeholder database fosters stronger community connections and support networks.
- Enhanced educational initiatives and regular meetings of the drought preparedness working group increase community awareness and readiness to face drought conditions.

### Economic

- Securing funding for industry diversification and promoting tourism ensures a stable and dynamic local economy that is less reliant on a single sector, particularly during droughts.
- Investment in connectivity improvements and local infrastructure enhances the region's attractiveness for new businesses and residents, boosting economic growth.

### Environment

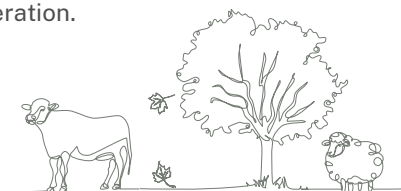
- Promoting water efficiency measures and sustainable agricultural practices through education and centralised resources helps conserve vital resources during drought conditions.
- Enhanced coordination and comprehensive planning efforts improve the region's ability to manage water and other environmental resources efficiently.

## Delivery model

|                          |                                                                                                                                                                                                                                                                                                     |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Lead agency</b>       | <ul style="list-style-type: none"> <li>• Glen Innes Severn Council</li> <li>• Tenterfield Shire Council</li> </ul>                                                                                                                                                                                  |
| <b>Delivery partners</b> | <ul style="list-style-type: none"> <li>• Department of Primary Industries and Regional Development (DPIRD)</li> <li>• Local Land Services (LLS)</li> <li>• GLENRAC</li> <li>• Granite Borders Landcare Committee (GBLC)</li> <li>• Rural Aid</li> <li>• Rural Assistance Authority (RAA)</li> </ul> |
| <b>Timeframes</b>        | <ul style="list-style-type: none"> <li>• 6 – 12 months</li> </ul>                                                                                                                                                                                                                                   |
| <b>Cost estimates</b>    | <ul style="list-style-type: none"> <li>• \$50k – \$100k</li> </ul>                                                                                                                                                                                                                                  |
| <b>Financial options</b> | <ul style="list-style-type: none"> <li>• FDF/FRRR Funding</li> <li>• NSW Reconstruction Authority Disaster Risk Reduction Fund (DRRF) Risk Reduction stream</li> </ul>                                                                                                                              |

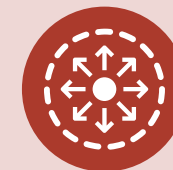
## Key outcomes

- Develop trust between the community and local government to improve social unity within the community.
- Demonstrate innovative and cohesive leadership across Councils to solve challenging community issues.
- Build expertise and skills in the region and increase community strength and education.
- Diversify industries in the region to build a more resilient and dynamic local economy, less reliant on the agricultural sector.
- Improve collaboration among councils, agricultural organisations, and community groups to improve drought preparedness and responses.
- Create a coordination hub that provides essential information and resources to farmers and the wider community, ensuring efficient access to support during drought.
- Identify and prioritise redress of connectivity gaps to enhance telecommunication infrastructure which supports both emergency communication and everyday business operations.
- Develop a comprehensive database of regional stakeholders to facilitate early identification of drought impacts, mental health support to streamline coordination of support.
- Use existing facilities as community hubs for agriculture-related education sessions and events to help bolster community engagement and potential income generation.



**Theme:** Robust and adaptive Infrastructure

**Action:** Building effective Leadership through knowledge sharing and connectivity (Transformative)



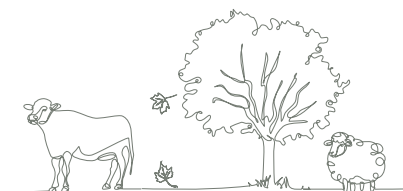
## Insights from consultation and the need

Well-developed infrastructure is essential for the region, especially during times of disaster. Community consultation highlighted the critical need for infrastructure to support the region's resilience and growth. Key insights underscored the need for water and water-efficient infrastructure to mitigate the impacts of drought. It was also established that better connectivity between local businesses and farmers to grants and funding is necessary for upgrading water infrastructure. Funding for feasibility studies was identified as a solution to establish better access to emergency hubs for disaster preparedness.

Upgraded and new infrastructure is required to sustain population growth, increase healthcare services, education facilities, and housing diversity to meet community needs. Consultation indicated that improving servicing and infrastructure may contribute to sustaining residents and attracting tourists to stay and return and contribute toward local economic growth and development. Investment in critical infrastructure is needed to ensure a robust and resilient region capable of withstanding and thriving through future challenges.

## Implementation actions

1. Invest in and repurpose infrastructure to attract, sustain and retain the local population. This includes health care services, educational opportunities, recreational facilities and housing that supports the needs of a diverse (and aging) population. This will require working with partners in the region.
2. Invest in a feasibility study to determine opportunities and optimal water storage locations such as large-scale water tanks, around the region to support drought mitigation and firefighting efforts. This study will identify the most effective sites to enhance water availability and improve emergency response capabilities.
3. Invest in an audit of the region's infrastructure to assess condition, remaining lifespan, potential upgrades or refurbishment of existing infrastructure. The findings may help secure funding to support the development of new infrastructure, ensure the maintenance and enhancement of current facilities, and implement solutions to meet the region's future needs.
4. Promote and invest in greywater recycling systems for residential and commercial properties to reduce treated water use and provide alternative sources for non-potable water uses.
5. Better connect local businesses, individuals and primary producers with grants and funding to upgrade their own water infrastructure.
6. Revise and enhance drought management plans to incorporate infrastructure improvements, such as upgrading water storage facilities, enhancing water distribution systems, and integrating advanced water management technologies. These amendments will ensure the region's infrastructure is better equipped to handle drought conditions, improving resilience and resource efficiency.
7. Encourage the adoption of water-efficient infrastructure, including taps, toilets, shower heads, dishwashers, and washing machines. This initiative will promote water conservation and reduce overall water consumption in the region. Support rebate schemes for residents and business.
8. Improve education and communication about water conservation to urban residents and newcomers to regional towns.



## Pillars of resilience

### Social

- Encourages social cohesion and engagement through improved infrastructure, ensuring that the needs of the community are met.

### Economic

- Stimulates local economy by attracting and retaining residents and businesses through improved infrastructure and services.
- Supports local businesses and primary producers by connecting them with grants and funding for water infrastructure upgrades, enhancing their operational resilience.
- Promotes sustainable economic growth by incentivising water-efficient practices, reducing costs and conserving resources.

### Environment

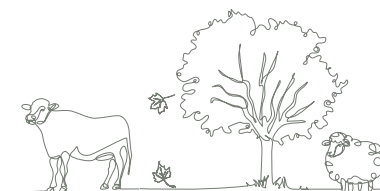
- Improves water security and environmental sustainability through strategic placement of water storage infrastructure and integration of advanced water management technologies.
- Reduces water waste by promoting greywater recycling systems for residential and commercial properties.
- Encourages sustainable water usage through rebate schemes for water-efficient infrastructure, to mitigate the impact of drought conditions.

## Delivery model

|                          |                                                                                                                                                                                                                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Lead agency</b>       | <ul style="list-style-type: none"> <li>• Glen Innes Severn Council</li> <li>• Tenterfield Shire Council</li> </ul>                                                                                                                                                                |
| <b>Delivery partners</b> | <ul style="list-style-type: none"> <li>• Department of Primary Industries and Regional Development (DPIRD)</li> <li>• Department of Climate Change, Energy, the Environment and Water (DCCEEW)</li> <li>• Local Land Services (LLS)</li> <li>• Local Utility providers</li> </ul> |
| <b>Timeframes</b>        | <ul style="list-style-type: none"> <li>• 6 – 12 months</li> </ul>                                                                                                                                                                                                                 |
| <b>Cost estimates</b>    | <ul style="list-style-type: none"> <li>• \$50k – \$100k</li> </ul>                                                                                                                                                                                                                |
| <b>Financial options</b> | <ul style="list-style-type: none"> <li>• FDF/FRRR Funding</li> <li>• Department of Infrastructure, transport, regional development and the arts – Growing Regions Program – Round 2</li> </ul>                                                                                    |

## Key outcomes

- Enhanced community well-being and safety through improved access to essential services and well-equipped emergency evacuation hubs.
- Strengthened economic stability and growth by attracting and retaining residents and businesses through providing financial support for water infrastructure upgrades.
- Improved water security and management with strategic placement of large-scale water tanks and adoption of advanced water management technologies.
- Promotion of sustainable environmental practices through adoption of greywater recycling systems and incentivised water efficient infrastructure.
- Integrated community and infrastructure development, fostering a more connected and resilient community through comprehensive infrastructure projects.
- Collaboration with regional partners to ensure effective implementation and support of infrastructure initiatives, enhancing overall resilience and sustainability.



## 5.5. Monitoring, Evaluation and Learning

To drive improved drought resilience in the region, this Plan has identified steps required for change to meet the needs of the region. These include priority and related actions to be implemented; the outcomes that could be achieved as a result and how each would relate to building resilience. The Plan includes steps needed to implement the changes, and a delivery model to do so.

To ensure this Plan delivers on the actions identified, a Monitoring, Evaluation Learning (MEL) Framework should be adopted (See Figure 28). The FDF MEL Framework will be used to assess the effectiveness of implementing this Plan (DAWE, 2020).

- Impact – Do the drought impacts identified in the Plan represent those of greatest impact to the region?
- Rationale – Do the current actions and those proposed in this Plan align to the strategic priorities of Social, Economic and Environmental?
- Outputs – Does the implementation of the Plan deliver the outputs detailed in this Plan?
- Outcomes – Do the benefits of implementing the actions improve resilience across the three strategic priorities for Glen Innes Severn and Tenterfield LGAs? If not, what can be adjusted to improve the outcomes?

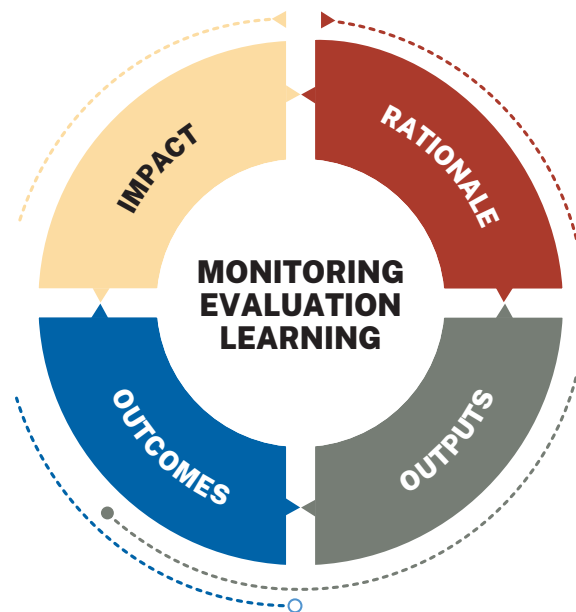


Figure 28 FDF Monitoring, Evaluation Learning Framework

The two Councils working together with the delivery partners including the NSW State Government, not-for-profit organisations, industry and community organisations will need to collaborate on the implementation of this Plan.

The Councils have been nominated as the lead agency for the delivery of actions in this Plan. This is due to both the allocation of implementation funding via the FDF and the ability of Councils to lead and advocate for the resilience needs of their communities. However, it is expected many of the initiatives will be delivered as a collaborative effort.

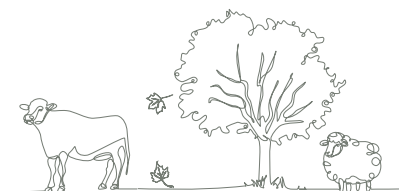
Initial Plan measures of success have been identified for the first year of the Plan (Section 5). This establishes a starting point to measure the effectiveness and progress of each of the actions.

When identifying the measures of success for each of the actions, the metrics should, where possible, have quantifiable terms to enable data to be gathered to support a clear monitoring and review process. Ideally, they should follow the SMART criteria: Specific, Measurable, Achievable, Relevant and Time-bound.

Where possible, metrics have been adopted from existing data and systems such as the Australian Bureau of Statistics, census data and existing reporting that could be obtained through Council. The metrics would need to be monitored and reported to establish a baseline level with future years' measures of success and metrics to be identified.

Critical to regional-level monitoring of, and improvement to, the Plan will be an on-going project control group comprising the two Councils with external stakeholders as needed. This group would have the role of initiating actions in line with the Plan, reviewing progress against the Plan objectives.

The Plan is a snapshot in time and needs regular update to ensure the overall actions still align with the region's requirements. A short progress review should be published annually as part of the individual Councils Annual Report (as part of their Integrated Planning and Reporting processes), highlighting any issues in implementation, and reporting using the metrics described. A review and update of the Plan should be scheduled every 4 years. This should include community consultation to ensure the needs, actions and outcomes are still relevant and to support this Plan remaining current, embedding the Plan to ensure local ownership of the Plan in the communities and progressing



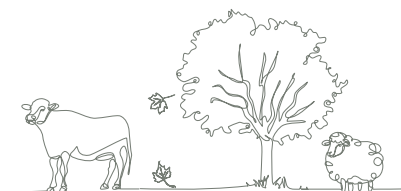
implementation. Both Councils will continue to meet bi-annually to assess Plan progress. This may include inviting other stakeholders and delivery partners to provide progress updates. Aside from this, both Councils would be involved in other implementation groups for specific actions. A summary that provides a concise Action Plan is provided in Appendix 3.

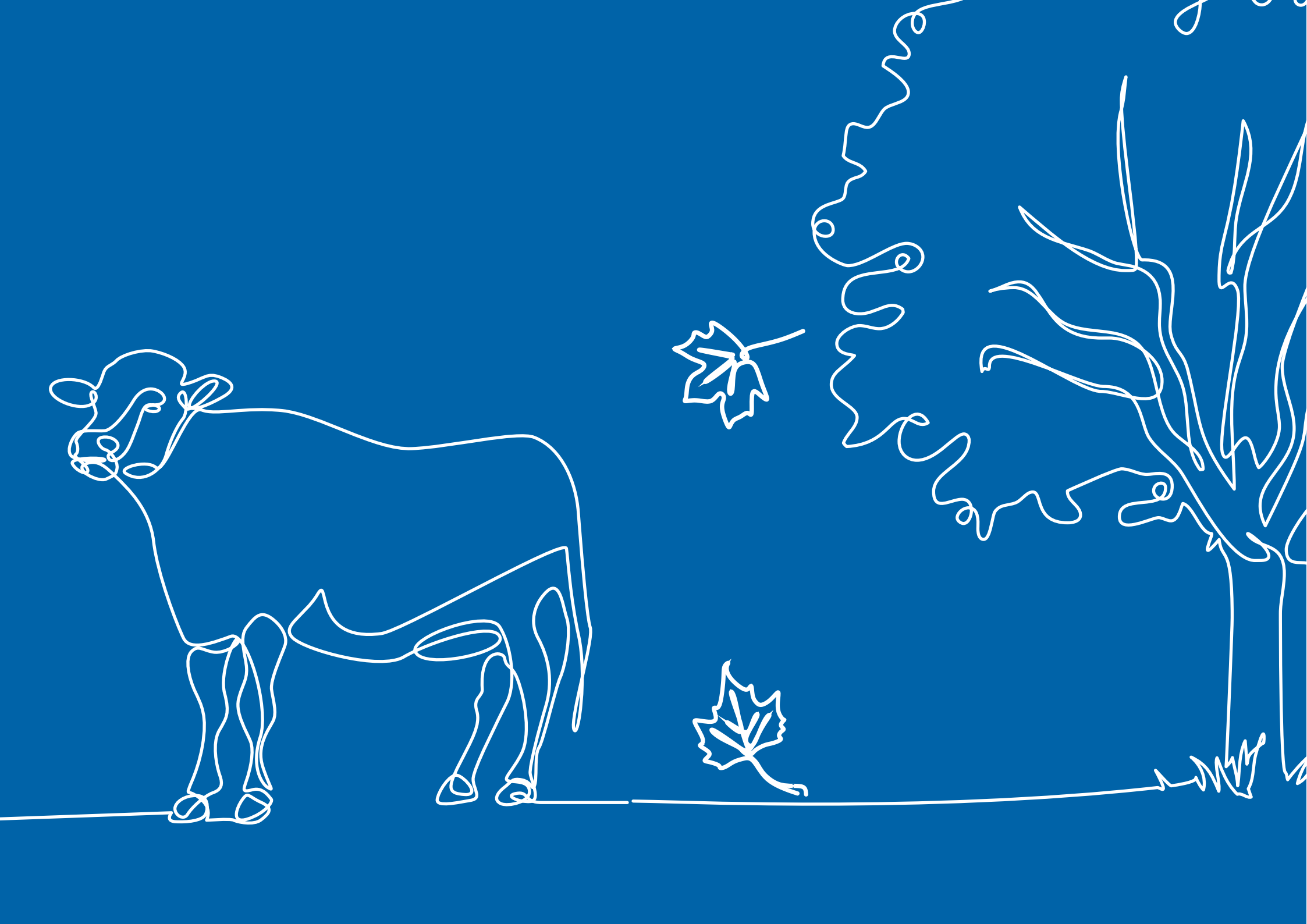
Some of the key parameters assumed in the implementation of the Plan include:

- Effective cooperation between delivery partners.
  - Capacity of local Councils to lead and coordinate other stakeholders.
  - Capacity and engagement of other stakeholders to lead and coordinate actions where required.
  - Capacity of other stakeholders and the community to participate and actively engage in implementation activities.
  - The ability to record and share plan outcomes.
  - The integration of the Plan with other local planning activities.
- Stakeholders' willingness to share knowledge and work with each other.
  - On-going funding to support implementation of Plan actions.
  - The remit of delivery partners/stakeholders will not fundamentally change.
  - Implementation targets past the short-term can be defined and agreed.
  - That the region is not moving directly into another drought and has some lead time to commence plan activities.
  - Other agencies continue to deliver drought work that is being leveraged as a part of this Plan.
  - Some of the longer-term factors that may impact Plan outcomes include:
    - Ability to effect meaningful and longer-term behaviour change.
    - Legislative and regulatory change required to implement the actions.
    - Regular review and update of the Plan.

## 5.6. Future updates

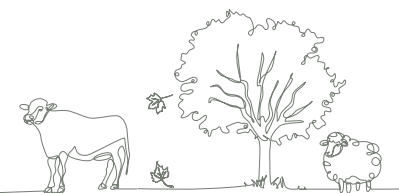
CSIRO reviewed this Plan. There were a number of suggestions for changes/ updates for future Plan revision. To ensure these are considered in the next revision, a summary can be found in Appendix 4.





# 06

## Conclusion



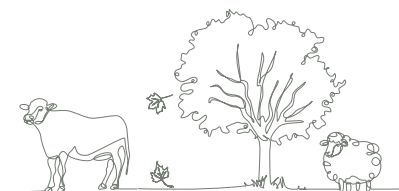
## 6. Conclusion

This Plan was developed through a bottom-up approach by the region and capitalises on earlier efforts made by the community to improve its response to drought. The community should be congratulated for taking control and driving improvement.

This Plan has been designed with Glen Innes Severn Council and Tenterfield Shire Council being the main leader of actions to ensure the Plan is actionable. The delivery of the Plan will require other agencies including state government, industry, not-for-profit organisations and the community to partner in the delivery of the Plan.

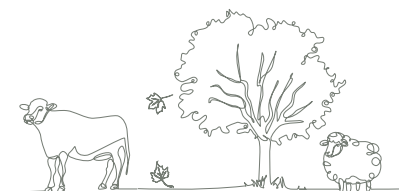
This Plan has identified a parcel of actions that can be financed through the FDF Implementation Funding as well as others that will require further investigation for alternate funding options.

This Plan illustrates key actions for the region now. These are not static and will need on-going review and updating.



# 07

## Appendices



# Appendix 1 – What we heard

## Glen Innes SRG #1

### What worked well

- Localised fundraising efforts
- Local Land Services (LLS) proactively contacting farmers to check on their well-being
- The establishment of the Glen Innes Support Service Network
- GLENRAC delivered enormous support throughout 2019 - 2020 drought, including initiatives including (but not limited to) festivals, gatherings, functions to assist the community through times of drought. This also included staff being trained in mental health first aid
- Bringing service providers to the Glen Innes Severn LGA
- Direct coordination of donations to those in need
- Support from NSW Rural Assistance Authority (RAA) staff
- Facilitated access to government assistance through groups like GLENRAC and the Salvation Army.

### What hasn't worked well

- Inadequate household water storage solutions
- Uncoordinated donations without prior consultation
- Delays in government support announcements
- Challenges in accessing mental health services
- A shortage of water infrastructure contractors
- Inaccurate drought predictions from the Bureau of Meteorology (BoM) affecting decision-making

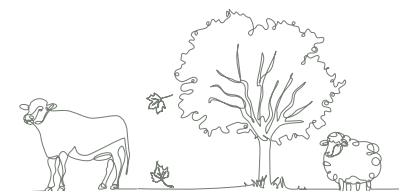
- Insufficient support for local businesses
- Limited assistance for individuals with off-farm income
- Government channelling grant money instead of direct to users
- Lack of preparedness for resilience projects
- Over-reporting of drought impacts adversely affecting mental health.

### What needs to happen / ideas?

Stakeholders from the Glen Innes Severn LGA highlighted that resilience could be improved though:

- Increased local input in decision-making processes
- Coordinated management of donations at the local level
- Support for on-farm assistance or caretaker programs
- Enhanced business literacy initiatives
- Immediate local support, as regional or state models are often too removed
- Learning from successful practices in other regions
- Improved weather forecasting capabilities
- Better connectivity and technology literacy
- Clear information on future grant funding for rural areas
- Financial resources dedicated to local community support

- Establishment of dedicated resilience leaders and organisations
- Development of clearer community plans
- Emphasis on forward-thinking and preparation strategies
- Promotion of rural living to address the cost-of-living crisis
- Large-scale tourism promotion campaigns
- Efforts to attract metropolitan businesses to regional towns
- Positive messaging campaigns to boost morale
- Positioning Glen Innes Severn as a renewable energy hub
- Attracting corporate agriculture headquarters to the area
- Initiatives similar to "West is Best", an initiative to promote living and working in Western NSW
- Development of the Glen Innes to Tenterfield Rail Trail
- Practical drought planning for small businesses
- Clear guidance on available assistance sources
- Defined roles and responsibilities for local, state, and federal entities
- Understanding and addressing points of conflict.



## Tenterfield SRG #1

### What worked well

- Availability of bores for carting water for livestock
- Proactive council actions, such as cleaning town dams and upgrading water infrastructure
- Household income support and freight subsidies
- Families uniting to conserve water
- Implementing water restrictions and limitations
- Removing dead trees and managing stock levels
- Recycling treated water for public spaces and creating bird habitats
- Providing water sources in national parks and state forests
- Organising community gatherings
- Distributing gift cards and grocery boxes from organisations like the Tenterfield Lions Club
- Water donations to farms and installing house tanks, coordinated by the Rotary Club
- Strong community engagement and awareness efforts.

### What hasn't worked well

- Short-term funded positions
- Educating people on water use who have relocated to the area
- Removal of water sources from national parks
- Closure of main national parks affecting hospitality businesses
- Pine trees in town dying and posing a fire risk.

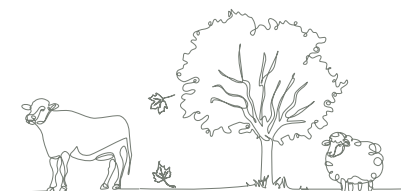
### What needs to happen / ideas?

The Tenterfield LGA highlighted that resilience could be improved though:

- Strategic placement of larger water tanks around the region
- Educating new landholders on land and fire management responsibilities
- Finding ways to contact new landholders despite Privacy and Personal Information Protection (PPIP) Act restrictions
- Organising farm planning workshops with additional resources
- Appointing a farm planning specialist to help understand drought trigger points for selling stock

- Implementing affordable loans for recovery
- Hosting drought resilience forums
- Allocating water tanks to households
- Educating the community on better water usage
- Supporting knowledge sharing on drought

resilience strategies.



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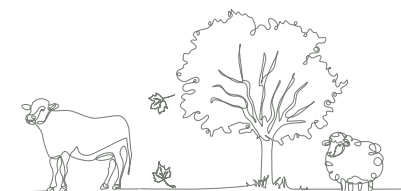
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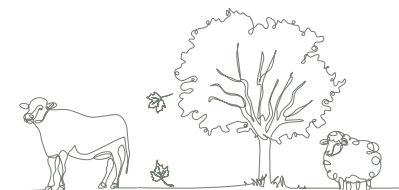
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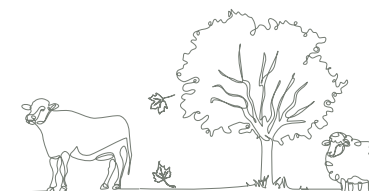
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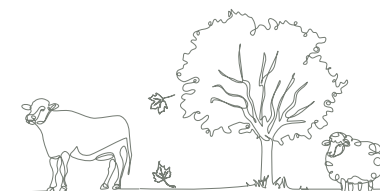


## Appendix 3 – Summary of proposed actions

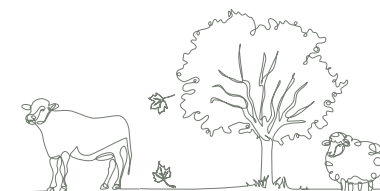
| RDRP Themes                                                                                  | Action                                       | Pillars of resilience            | Resilience capacity building | Key outcomes                                                                                                                                                                                                                                                                                                                                                                                                                      | Suggested Lead                                                   | Cost          | Timeframe                                                                           |
|----------------------------------------------------------------------------------------------|----------------------------------------------|----------------------------------|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|---------------|-------------------------------------------------------------------------------------|
| Theme 1<br> | Strengthening regional health and wellbeing  | Social, Economic and Environment | Adaptive                     | <ul style="list-style-type: none"> <li>Enhanced social cohesion and connectivity through community engagement initiatives and events.</li> <li>Greater exposure of community groups and support agencies who are active in mental health services.</li> <li>Build a community responsive to natural disasters.</li> <li>Increased local resources to prepare, respond, and recover from drought and its impacts.</li> </ul>       | Rural aid                                                        | \$50 - \$100k |  |
| Theme 1<br> | Nurturing Green Spaces for Community Benefit | Social, Economic and Environment | Adaptive                     | <ul style="list-style-type: none"> <li>Enhanced mental and physical well-being among community members able to access preserved and enhanced green spaces.</li> <li>Improved ecological health and resilience of green spaces</li> <li>Increased tourist activity as a result of the region's preserved green spaces; contributing to the local economy through spending in hospitality, retail, and tourism services.</li> </ul> | Glen Innes<br>Severn Council<br>and Tenterfield<br>Shire Council | \$50 - \$100k |  |



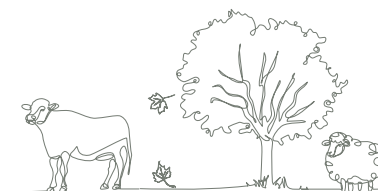
| RDRP Themes                                                                                         | Action                  | Pillars of resilience      | Resilience capacity building | Key outcomes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Suggested Lead | Cost          | Timeframe                                                                           |
|-----------------------------------------------------------------------------------------------------|-------------------------|----------------------------|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|---------------|-------------------------------------------------------------------------------------|
| <b>Theme 3</b><br> | Regional water security | Economic and Environmental | Transformative               | <ul style="list-style-type: none"> <li>Community is better informed, leading to more timely decisions that reduce the impacts of drought.</li> <li>Improved community awareness and adoption of water efficiency measures.</li> <li>Timely implementation of water restrictions to conserve resources during droughts.</li> <li>Enhanced community readiness and resilience through educational programs and workshops.</li> <li>Strengthened coordination among stakeholders for more effective drought resilience.</li> <li>Increased adoption of responsible water and fire management practices.</li> <li>Stimulated local economy through government-supported rebate programs.</li> <li>Tailored drought preparedness strategies addressing local needs and priorities.</li> <li>Enhanced water storage capacity and security through feasibility studies for weir development.</li> <li>Improved environmental sustainability and resilience to climate variability.</li> <li>Planning and management practices assist in reducing community impact on the natural environment and protect biodiversity</li> </ul> | GLENRAC        | \$50 - \$100k |  |



| RDRP Themes                                                                                         | Action                                                                   | Pillars of resilience            | Resilience capacity building | Key outcomes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Suggested Lead                                          | Cost          | Timeframe                                                                           |
|-----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|----------------------------------|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|---------------|-------------------------------------------------------------------------------------|
| <b>Theme 4</b><br> | Building effective leadership through knowledge sharing and connectivity | Social, Economic and Environment | Transformative               | <ul style="list-style-type: none"> <li>Develop trust between the community and local government to improve social unity within the community.</li> <li>Demonstrate innovative and cohesive leadership across Councils to solve challenging community issues.</li> <li>Build expertise and skills in the region and increase community strength and education.</li> <li>Diversify industries in the region to build a more resilient and dynamic local economy, less reliant on the agricultural sector.</li> <li>Improve collaboration among councils, agricultural organisations, and community groups to improve drought preparedness and responses.</li> <li>Create a coordination hub that provides essential information and resources to farmers and the wider community, ensuring efficient access to support during drought.</li> <li>Identify and prioritise redress of connectivity gaps to enhance telecommunication infrastructure which supports both emergency communication and everyday business operations.</li> <li>Develop a comprehensive database of regional stakeholders to facilitate early identification of drought impacts, mental health support to streamline coordination of support.</li> <li>Use existing facilities as community hubs for agriculture-related education sessions and events to help bolster community engagement and potential income generation</li> </ul> | Glen Innes Severn Council and Tenterfield Shire Council | \$50 - \$100k |  |



| RDRP Themes                                                                                         | Action                                           | Pillars of resilience            | Resilience capacity building | Key outcomes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Suggested Lead                                               | Cost          | Timeframe                                                                           |
|-----------------------------------------------------------------------------------------------------|--------------------------------------------------|----------------------------------|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|---------------|-------------------------------------------------------------------------------------|
| <b>Theme 5</b><br> | Appropriate infrastructure to support the region | Social, Economic and Environment | Transformative               | <ul style="list-style-type: none"> <li>Enhanced community well-being and safety through improved access to essential services and well-equipped emergency evacuation hubs.</li> <li>Strengthened economic stability and growth by attracting and retaining residents and businesses through providing financial support for water infrastructure upgrades.</li> <li>Improved water security and management with strategic placement of large-scale water tanks and adoption of advanced water management technologies.</li> <li>Promotion of sustainable environmental practices through adoption of greywater recycling systems and incentivised water efficient infrastructure.</li> <li>Integrated community and infrastructure development, fostering a more connected and resilient community through comprehensive infrastructure projects.</li> <li>Collaboration with regional partners to ensure effective implementation and support of infrastructure initiatives, enhancing overall resilience and sustainability.</li> </ul> | Glen Innes Severn Council and Tenterfield Shire Council      | \$50 - \$100k |  |
| <b>Theme 2</b><br> | Supporting local business                        | Social, Economic and Environment | Absorptive                   | <ul style="list-style-type: none"> <li>Stimulated local economy, providing direct financial support to businesses and community members during droughts.</li> <li>Enhanced economic diversity and growth by exploring opportunities to value-add to existing industries and businesses, leveraging potential investments that may aligned with the New England REZ.</li> <li>Improved business preparedness and resilience to drought impacts through professional advice and support, ensuring business plans incorporate effective drought response strategies, assisting local businesses and farmers against economic downturns.</li> <li>Enhanced resilience of new entrants to agriculture against drought and other challenges.</li> </ul>                                                                                                                                                                                                                                                                                         | Glen Innes Business Chamber and Tenterfield Business Chamber | \$250k        |  |



| RDRP Themes                                                                                         | Action                   | Pillars of resilience            | Resilience capacity building | Key outcomes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Suggested Lead                                               | Cost            | Timeframe                                                                           |
|-----------------------------------------------------------------------------------------------------|--------------------------|----------------------------------|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|-----------------|-------------------------------------------------------------------------------------|
| <b>Theme 2</b><br> | Economic diversification | Social, Economic and Environment | Absorptive                   | <ul style="list-style-type: none"> <li>Increased visitor number and tourism revenue through better promotion of drought-resistant activities and attractions, reducing dependency on single sectors.</li> <li>Strengthened local economy through improved infrastructure and amenities at cross-border activation hubs, facilitating increased tourism and economic activity.</li> <li>Growth in population and business relocation through better promotion of the region's lifestyle, economic opportunities, and community support.</li> <li>Better regional infrastructure, leading to improved visitor experience and extended stays.</li> <li>Strengthened regional identity and brand recognition, positioning Glen Innes Severn and Tenterfield LGAs as desirable destinations for residents, visitors, and investors through infrastructure investments and marketing efforts.</li> </ul> | Glen Innes Business Chamber and Tenterfield Business Chamber | \$150k - \$500k |  |

## Key:

### Themes:

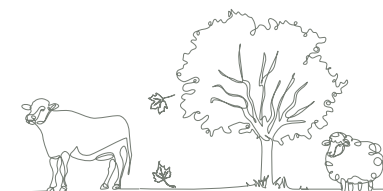
|                                                                                     |                                                                      |
|-------------------------------------------------------------------------------------|----------------------------------------------------------------------|
|    | Theme 1 – Community: Empowered and Resilient Communities             |
|   | Theme 2 – Economy: Strong and Innovative Economy                     |
|  | Theme 3 – Environment: Healthy, Sustainable and Thriving Environment |
|  | Theme 4 – Governance: Transparent and Inclusive Leadership           |
|  | Theme 5 – Infrastructure: Robust and adaptive infrastructure         |

### Cost:

|        |                                                                       |
|--------|-----------------------------------------------------------------------|
| \$     | Can be supported by existing resources from Stakeholders and Partners |
| \$\$   | Additional Resources Required (resources and financial)               |
| \$\$\$ | Significant additional financial support required to deliver          |

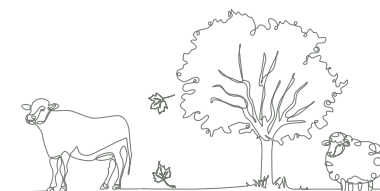
### Timeframe:

|                                                                                       |                                |
|---------------------------------------------------------------------------------------|--------------------------------|
|  | Short term: less than 6 months |
|  | Medium term: 6 – 12 months     |
|  | Long term: 1-2 years           |



## Appendix 4 – Future RDRP updates

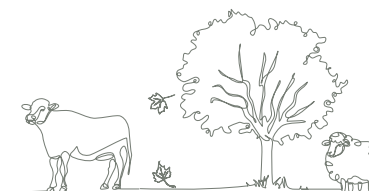
| Review component                                                    | Number | Suggestion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------------------------------------------------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Component 1: Definitions, vision, goals, outcomes                   | 1      | Future plan updates could further (or more clearly) incorporate stakeholder perceptions into definitions of what drought resilience means in the regional context. Doing so would support the process of forming more locally relevant resilience principles for drought planning.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                                                                     | 2      | Future plan updates could clarify who was involved in developing the visions, actions and outcomes, and how different groups were involved in this process. For example, the degree to which First Nations Australians have been involved in shaping the vision, goals, and outcomes is unclear. Accordingly, the vision, goals and outcomes could be amended to better reflect the interests of those industries, groups or communities who may be particularly vulnerable to drought.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Component 2: Stakeholder engagement, participation and partnerships | 3      | Future updates of the plan could be better informed by stakeholder mapping of groups vulnerable to drought. This could include identifying under-represented community segments, gauging community capacity to participate, and checking participation levels of different groups (e.g. youth, seniors, all genders, vulnerable people, First Nations people, minority groups). This information could be used to improve identification, selection and engagement of stakeholders as well as to ensure that adequate supports are in place to involve different community segments. In summary, future plan iterations could provide (i) further details of the aims, methods and demographics of participants or specific findings from the stakeholder engagements conducted, including if/how vulnerable groups were identified and/or targeted and (ii) further details of the targeted interviews with 14 industry and community members (p. 11), including details of which industries/groups were represented and why they were targeted. |
|                                                                     | 4      | Future plan updates could provide more information regarding the stakeholders represented and their respective industries and levels of vulnerability or exposure to drought. This should include better descriptions of which industries were engaged and why and would enable an assessment of the diversity of partnerships forged in plan preparation with industry, government and community. Future plan updates could also identify: (i) whether the plan leverages any existing collaborations between stakeholders and (ii) the extent to which collaborations are to remain ongoing beyond the plan's development.                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Component 3: Active learning and adaptive governance                | 5      | Future plan updates could clearly articulate an active and structured learning process connected with the regionally specific MEL process that is being planned for development.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                                                                     | 6      | Future plan updates could outline formal adaptive governance arrangements that clearly address the following questions:<br>1. How will the governance arrangements ensure ongoing appropriate representation of groups with different vulnerabilities to drought, including First Nations communities, industries and other local stakeholders?<br>2. How will the governance be nested with other governance structures and ensure that decisions are made at the appropriate level (the level closest to where they will have an impact)?<br>How will responsibilities and ownership of the plan be balanced with rights and resources at appropriate levels for coordinating and implementing resilience-building activities?                                                                                                                                                                                                                                                                                                                  |



| Review component                                                                        | Number | Suggestion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------------------------------------------------------------------------------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Component 4: Evidence base, a stocktake of past and current relevant work and alignment | 7      | The sections on regional profile and history of drought impacts (Section 2 and Section 3) are generally adequately referenced, but future plan updates for these sections could benefit from including: (i) an assessment of the quality of the evidence used (e.g. peer reviewed versus grey literature versus other sources), and (ii) further information on stakeholder and community views that have informed Section 2 and Section 3. For example, separate to the Case Studies in Section 4, incorporating more grassroots accounts of what makes the region and what influences its vulnerabilities to drought would complement the existing description and analysis.                                                                                                                  |
|                                                                                         | 8      | <p>Future plan updates could include further analysis of the key linkages between the other plans and policies referenced in the plan, and their implications for understanding and contributing to the region's resilience. In particular, future plan updates would benefit from:</p> <ul style="list-style-type: none"> <li>• a better articulation of where and how these other plans have informed this plan and how this plan incorporates or complements the provisions made for drought in the other plans</li> <li>• noting complementary actions between plans, such as where this plan's actions contribute to the outcomes of other plans and/or where similar funding could be leveraged.</li> </ul>                                                                               |
| Component 5: System description and resilience assessment                               | 9      | Future plan iterations could more explicitly state the community segments from which different stakeholder perceptions are drawn from (e.g. agricultural business, First Nations communities, etc.). Similarly, it could be made more explicit how, where and which findings from the system description are reflected in the plan's actions and implementation.                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                                                                                         | 10     | Future plan updates could expand upon the drought resilience assessment to provide more detail on resilience in different sectors, supply chains and segments of the community and, in light of this information, revise future actions accordingly. It may also be advantageous to: (i) broaden the existing resilience assessment to be able to be more informed by stakeholder perceptions and (ii) move the resilience assessment to later in the plan and better identify how it has informed the proposed actions and priorities set out in Section 5. At present, the resilience assessment, which makes important points to underpin resilience planning, is poorly integrated into the rest of the plan.                                                                               |
| Component 6: Future scenarios                                                           | 11     | Future plan updates would benefit from developing a suite of plausible future scenarios through a participatory process with a diverse range of stakeholders. The excellent description of the climate drivers in the region (p. 33, Section 3.4) could provide a starting point to workshop scenarios with stakeholders that look at a range of sectors and potential adaptation pathways. The development of scenarios could (in addition to plausible climate scenarios) consider a mix of livelihoods and sectors, including those that rely less on agriculture and water. This scenario-building exercise would benefit from consultations with stakeholders about their perceptions of the likely future effects of drought in the region as well as other trends and drivers of change. |



| Review component                                                                 | Number | Suggestion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|----------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Component 7: Intervention options and pathways for building regional resilience  | 12     | Future plan updates could provide more explicit descriptions of what external support is required for successful implementation. More detail is needed about envisaged responsibilities, rights and resourcing arrangements across the local, regional, state and national levels to ensure that the plan's implementation is not overly reliant on external sources. Consideration could be given to how the proposed intervention options can reduce over-reliance on external support, particularly with respect to funding                                                                                                                                                                                                                                                                                                                                                             |
|                                                                                  | 13     | Future plan updates could prioritise, sequence and link proposed actions into alternative and complementary pathways. Such pathways, along with clear triggers for changing pathways, would better enable the navigation of uncertainty and adaptation to future change. This exercise may also help identify missing actions critical to these pathways. The plan would benefit from the addition of a diagram characterising how actions are sequenced, and how pathways are interlinked. Additionally, as suggested, future plan updates might review the existing considerations involved in the 'validation' of actions (p. 54) to ensure that the criteria are not unduly prioritising conservative actions or disincentivising more ambitious or transformational actions.                                                                                                          |
|                                                                                  | 14     | Future plan updates could also generate and incorporate additional innovative intervention options through further consideration of a wider range of plausible scenarios that emerge from the interaction of drought and related future stresses and shocks.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Component 8: Assessment of pathways and theory of change for recommended actions | 15     | Future updates could ensure that the plan's monitoring, evaluation and learning (MEL) framework involves regular assessments of proposed actions and the degree to which the actions incorporate flexibility to navigate uncertainty and change.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Component 9: Monitoring, evaluation, and learning                                | 17     | Future plan updates could better articulate the MEL framework and ensure it is supported by a well-articulated theory of change, with logical priorities and actions linked to the envisioned outcomes/impact areas (p. 57). This will help in understanding how and why the proposed priorities and actions will deliver the intended outcomes and impact. Additionally, future plan updates could better describe the responsibilities for carrying out the MEL, including which kind of stakeholders will be involved in developing, implementing and tracking its different components, including council representatives and external stakeholders. This could then be followed by some details around how this will support long-term adaptive management and keep the plan accountable.                                                                                             |
| Component 10: Integration between components                                     | 18     | Future plan updates could increase the active participation of stakeholders as sources of evidence in the different components of the plan, or at least better define the processes where stakeholder engagement has contributed to the plan. The resilience assessment (Section 1.5) is one specific area which could be better informed by the stakeholder consultation and could itself inform other sections of the plan. Doing so may reveal insights about the socio-ecological systems of the region, and what is required to reduce vulnerabilities and build resilience to drought in the region across the plan's key system environments. Future plan updates could also check for consistency in use of terms between the 'key terms' and the plan. The key terms section provides appropriate definitions, but these are not always used in the plan (e.g. Theory of Change). |





Produced by GHD

# Regional Drought Resilience Planning

The Regional Drought Resilience Planning Program is being delivered with joint funding from the Australian Government's Future Drought Fund and the NSW Government.

The Regional Drought Resilience Planning Program provides support to identified Local Government Areas in NSW to develop drought resilience plans that can be implemented by councils and their communities.



October 2024



Australian Government  
Department of Agriculture,  
Fisheries and Forestry



Future  
Drought  
Fund

Supported by



Regional Drought Resilience Plan – Northern New England High Country