RDR PLAN - 004

FAR NORTH WEST
JOINT ORGANISATION

REGIONAL DROUGHT RESILIENCE PLAN

Far Northwest - Bourke Shire Council, Brewarrina Shire Council, Cobar Shire Council and Walgett Shire Council

August 2024

ACKNOWLEDGEMENT OF GOVERNMENT FUNDING

This project is jointly funded by the Australian Government and the NSW Government under the Future Drought Fund.

Australian Government

NSW GOVERNMENT

We also acknowledge the assistance from each council involved:

BOURKE SHIRE COUNCIL

BREWARRINA SHIRE COUNCIL

OBAR Shire OUTBACK NSW

WALGETT SHIRE COUNCIL

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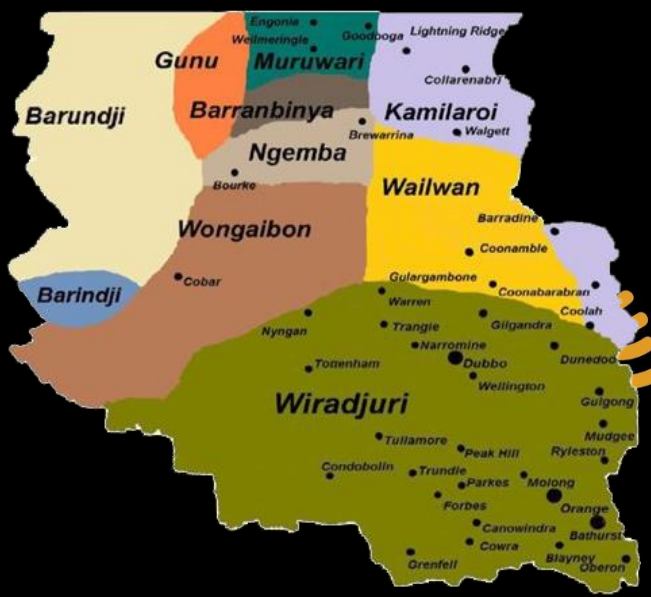
ACKNOWLEDGEMENT OF COUNTRY

We acknowledge the traditional custodians of the lands we are on, including the Ngemba, Wongaibon and Kamilaroi People, and pay our respects to their Elders past, present, and emerging. We celebrate the strength, courage and resilience of these communities, which inspire all generations to contribute towards a better New South Wales.

As individuals, communities, and governments, it is our collective responsibility to honour the culture and customs that have nurtured and continue to nurture this land. We endeavour to create a safe and inclusive environment for current and future generations, guided by wisdom of the traditional owners and aspirations of all who share this Country.



FOREWORD

The challenges of persistent aridity and the increasing frequency and severity of drought in Far North West New South Wales are not only a testament to the harsh realities faced by our communities, farmers, and landscapes but also instigates resilience, innovation, and unity. This Regional Drought Resilience Plan (RDR Plan - 004) emerges from a collaborative effort involving the communities and Councils of the Bourke Shire, Brewarrina, Cobar, and Walgett Shires.

This initiative embodies their collective ambition to significantly lessen the impacts of drought, enhance the viability of local businesses throughout these challenging periods, and sustain the economic productivity of the region. Together the Councils strive to enable their communities to emerge from period of drought more robust, adaptable and sustainable, with confidence of long-term liveability within the region.

This plan is a proactive roadmap for our future, drawing upon the knowledge of our land, the ingenuity of our people, and the strength of our communities. It recognises that the wellbeing of our region is inextricably linked to our ability to anticipate, prepare for, and adapt to the changing environment and climatic events. By engaging with all sectors of the community, including Councils, businesses and farmers, the RDR Plan leverages local knowledge, scientific research, and practical experience to forge a path forward.

Our region's history is marked by resilience in the face of adversity, and a constant awareness of water scarcity, driving the continual management of resources, whether in times of drought or relative abundance. The recent episodes of drought have underscored the necessity to enhance our proactive measures, focusing on strengthening our environmental, economic and social frameworks to mitigate these conditions.

This RDR Plan lays out strategic priorities and actions that will help to reduce the impact of drought, support our communities during times of scarcity, and ensure the sustainability of our agriculture, local businesses and natural resources. By collectively advancing these goals, we are setting a course for a resilient, economically vibrant, and sustainable future.

Our sincere gratitude goes to our people, partners and organisations who have contributed to the development of this plan. Your insights, expertise, and dedication have been invaluable in forging a legacy of resilience for future generations.

Signed by Ross Earl

Ross Earl

Executive Officer

Far North West Joint Organisation

FAR NORTH WEST JOINT ORGANISATION

CONTENTS

FAR NORTH WEST JOINT ORGANISATION

INTRODUCTION

The Regional Drought Resilience Planning program ('the program') is designed to enable local governments and their communities to better prepare for, respond to, endure, and thrive during, and recover from drought.

The Far Northwest Joint Organisation.[1] (FNWJO), which is a representative body for the three Shire Councils of Bourke, Cobar and Walgett, lodged successful applications to develop a Regional Drought Resilience Plan on behalf of seven Councils of Bogan, Bourke, Brewarrina, Cobar, Coonamble, Walgett, and Warren Shire.

All seven councils are part of the Western Plains Functional Economic Region. The councils were grouped into two consortia based on their location within the Functional Economic Regions.

The first consortium, known as the Far Northwest Region, includes Bourke, Brewarrina, Cobar, and Walgett Shires. The second consortium, known as the Northwest Region, comprises Bogan, Coonamble, and Warren Shires.

This Regional Drought Resilience Plan (RDR Plan-004 or The Plan) relates to the Functional
Economic Region of Bourke Shire, Brewarrina Shire, Cobar Shire and Walgett Shire. The Plan was co-designed with these Councils and their respective communities, and for the purpose of RDR Plan-004 will be referred to as the **Far Northwest Region.**

The plan included:

- A drought resilience literature review and an initial resilience assessment of the Far Northwest region.
- Engagement with the community members, organisations, and the local Councils.
- Development of initiatives and projects to improve the drought of the region across four outcome areas:[2]

People, Culture, and Community	Economy	Landscape and Natural Environment	Infrastructure and Built Environment
Enhance regional liveability, foster a robust and attractive community, and improve social resilience and wellbeing.	Expanding the business and agricultural sector's self-reliance and performance, ensuring stability and growth within the region's economy.	Improving the environmental resilience of the entire regional landscape, including agricultural lands and river systems.	Strengthening infrastructure to support economic and environmental sustainability.

Figure 1 – Outcome Areas

[1] Far North West Joint Organisation (FNWJO) is a representative body for several local government organisations as proclaimed in the Local Government Amendment (Regional Joint Organisations) Act 2017 No 65. Joint organisations, by this proclamation, are formally included in the Local Government Act 1993.
[2] The outcome areas were derived from consultation with the communities and Councils of the Far Northwest Region.

The initiatives and projects form part of a Drought Resilience, Adaptation and Management model that has three pillars to prepare, respond and limit the impact of droughts. Those pillars include:[3]

Pillar 1: Planning and Monitoring	Pillar 2: Responding to Drought Events	Pillar 3: Building Future Resilience
•Implementing drought monitoring, early warning systems, and responsive planning.	•Identifying vulnerable sectors and groups for targeted support during drought.	•Undertaking measures to mitigate drought impacts and enhance long-term resilience, including initiatives across the outlined priority areas.

Figure 2 - Drought Resilience, Adaption and Management Model Pillars

The Far Northwest region of New South Wales is confronted with a multifaceted spectrum of challenges that are predominantly influenced by shifts in demographics, economic dependencies, and vulnerabilities associated with climate change. Among the climatic concerns are the anticipated increases in temperatures, modifications in rainfall patterns, and the escalation of bushfire risks.

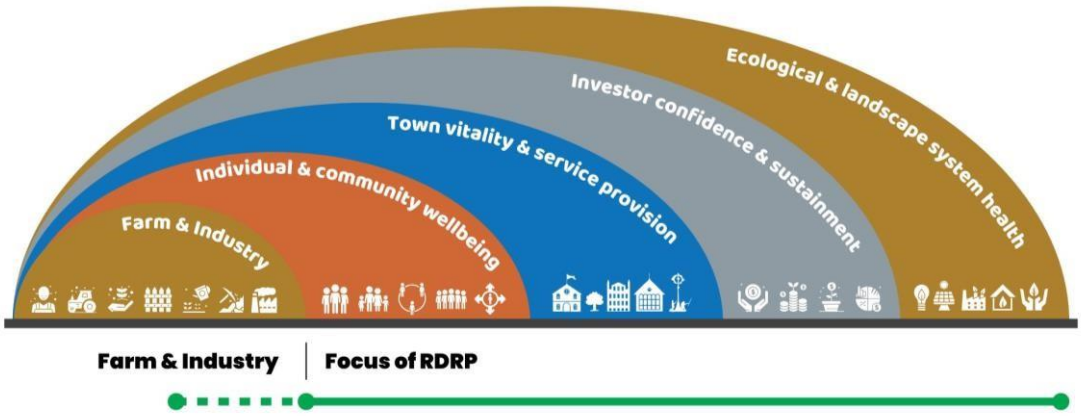


Figure 3 - Drought impacts on social, environment and economy (Source: Adapted from Meridian Urban)

The Far Northwest region is grappling with significant demographic transformations, including a projected population decline of 11% over the forthcoming 15 years[4], an increasingly aging demographic, and the outward migration of younger generations. This migration is largely attributed to the pursuit of opportunities beyond the traditional agricultural sector, which is compounded by concerns regarding work-life balance and the uncertainties brought about natural disasters.

[3] Adapted from Crossman, 2018. Also see the United Nations Drought Resilience Adaptation and Management Policy Framework, (United Nations Convention to Combat Desertification) August 2019.
[4] NSW Government, Western Plains Regional Economic Development Strategy 2023 Update (February 2023), available at https://www.nsw.gov.au/sites/default/files/2023-02/Western-Plains-REDS-2023-Update.pdf.

These demographic shifts pose a considerable threat to the social and economic framework of the region, through reduced skilled workforce, aging workforce and pressure on volunteers and businesses to do more with less. Strategies are essential to not only retain the current youthful populace but also to attract new, younger residents to the region, thereby ensuring its long-term viability and prosperity.

Among the climatic concerns are the anticipated increases in temperatures, modifications in rainfall patterns, and the escalation of bushfire risks.

These factors collectively underscore the necessity for the implementation of robust adaptation and mitigation strategies. Such strategies are essential to ensure the protection and sustainability of the region's agricultural productivity, biodiversity, and the overall health of the community.

To provide a geographical context for the Far Northwest Region, RDR Plan-004:

- Bourke Shire is located on the Darling River at the crossroads of the Mitchell and Kamilaroi highways and the Kidman Way. It is home to the Toorale and Gundabooka National Parks. Bourke Shire Council has a population of 2,348 people (ABS 2022), an area of 41,598 square kilometres, and includes the villages of Byrock, Enngonia, Fords Bridge, Wanaaring, and Louth. Additionally, Bourke is known for its small stock abattoir specifically built for processing goats, a rapidly growing commodity.

- Brewarrina Shire, bordering the state line of Queensland in North Western NSW, is located on the Barwon River and intersected by the Kamilaroi Highway. Its agricultural land is predominantly used for livestock grazing, with cotton growing as a significant part of its irrigated production. Brewarrina Shire Council has a population of 1,431 people (ABS 2022), an area of 19,162 square kilometres, and includes the villages of Brewarrina, Goodooga, Weilmoringle, New Angledool, and Gongolgon.

- Cobar Shire sits at the intersection of the Barrier Highway and Kidman Way in Western NSW and has road and air links to most of Australia's capital cities. Notably, there is an air service to Sydney (Monday to Friday), providing further connectivity. The region has rich deposits of copper and a significant goldfield. Cobar Shire Council has a population of 4,046 (ABS 2022), an area of 45,575 square kilometres, and includes the town of Cobar and villages of Euabalong, Euabalong West, Mount Hope, and Nymagee. However, there is no passenger rail service; travel to Dubbo is serviced by coach.

- Walgett Shire is situated on the banks of the Barwon River in Central West NSW. The Kamilaroi and Castlereagh highways travel through the Shire, which relies heavily on road freight for its agricultural products. Agriculture in Walgett focuses predominantly on livestock farming, complemented by a strong crop farming industry and valuable opal mining. Walgett Shire Council has a population of 5,516 people (ABS 2022), an area of 22,308 square kilometres, and includes the towns and villages of Walgett, Lightening Ridge, Collarenebri, Burren Junction, Carinda, Rowena, Cumborah, Cryon, Come by Chance, Glengarry, and Pokataroo.

BOURKE, BREWARRINA, COBAR AND WALGETT COUNCILS MAP

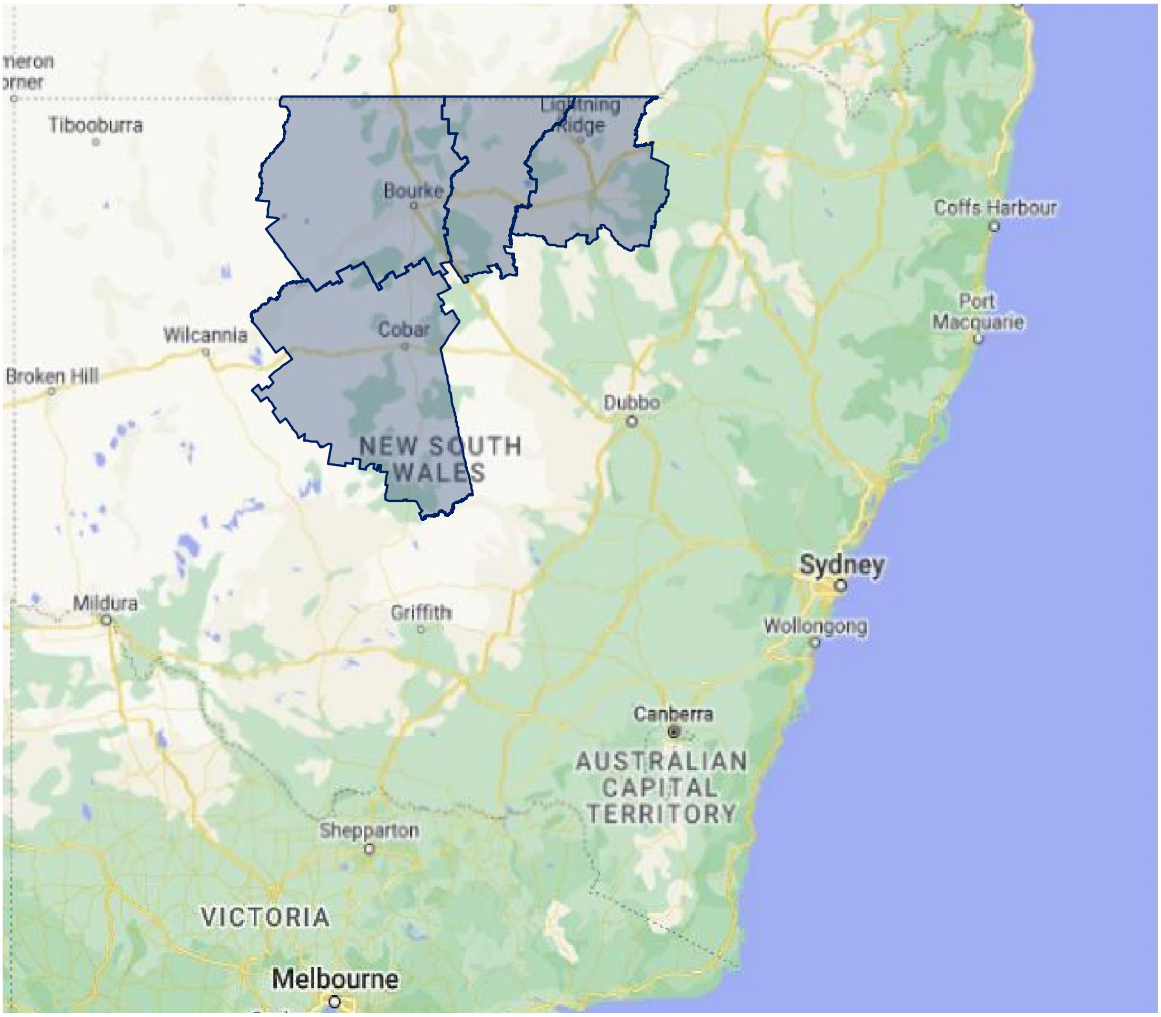


Figure 4 - Map of NSW with Bourke, Brewarrina, Cobar and Walgett Shire Councils highlighted. (Google Maps, 2024)


ERECTED 1910
CHEAPSIDE
W.H.BANNISTER
BUTCHERY
KING SALE
KING SALE
J&K BUTCHERY
Quality Meats · Gluten Free Products
Natural Nut Selection · Sauces & Marinades
OPEN
26

VISION

In the Far Northwest Region, our resilience against drought is forged through collaboration and co-design with our communities and councils.

Our vision is to:

- Cultivate a well-prepared and robust community, where every sector—agriculture, business, local governments, and community members—work together to sustain our way of life and enhance regional well-being.
- Amidst the inherently arid and harsh landscape of our region, focus on actions that protect our natural environment, strengthen our local economy, and enrich the social fabric of our community.

This vision is built on a foundation of innovative practices, nurtured by strong local networks, and shaped by the diverse voices of our region.

Our strategy, to underpin the vision, is to be dynamic and inclusive, continuously refined through dialogue with our community and adaptive to changing climatic conditions. As a result, our plan prioritises adaptive strategies which equip and better prepare communities to respond to the changing conditions, future uncertainties and shocks which accompany periods of drought. This includes continuous monitoring of water resources, flexible infrastructure projects, and community-driven initiatives that can be adjusted as new information and technology becomes available. Strategic investments in water storage, connectivity and sustainable practices are designed to enhance capacity to adapt to future climatic variability.

The vision for this plan was informed by significant input from members of the community, stakeholders, including local governments, community organisations and groups across a variety of sectors. Councillors, farmers, business owners and residents participated in early consultations, with ongoing feedback received through workshops, surveys and follow-up meetings.

A collaborative, co-designed approach has resulted in a culmination of recommendations which prioritise both relevance and effectiveness, as well as emphasising local leadership and community engagement. By moving forward together, the intent is that we safeguard our region's vitality, preserve our natural resources, and build enduring resilience to drought.

Through this collective effort, we aim to convert challenges into opportunities for growth and adaptation, ensuring we emerge from each drought more connected and resilient than before.

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DROUGHT RESILIENCE AT A GLANCE

Drought resilience in our region is defined as the capacity of our communities, local governments and stakeholders to anticipate, prepare for, respond to and recover from drought conditions. This resilience is rooted in our ability to adapt, transition and transform our economic, social, and environmental systems in the face of changing climatic conditions. It reflects our commitment to maintaining and enhancing the vitality of our region through collaborative efforts and innovative practices.

Bourke, Brewarrina, Cobar and Walgett Shires emphasised that resilience within the region should not just encompass the capacity to withstand drought, but also the ability to transition and transform their systems when maintaining the status quo is no longer viable. This includes exploring new economic opportunities, adopting sustainable agricultural practices, and fostering social cohesion and connectivity.

The Drought Resilience Program 'Logic Map'[5] is a tool that solidifies our resilience plan into a clear, actionable sequence. It provides stakeholders with an immediate understanding of the steps we are taking to strengthen the region's ability to manage drought conditions. This map illustrates how specific inputs and planned initiatives translate into concrete outputs and measurable outcomes, directly linking back to the vision of a robust community, empowered by innovative practices and strong local networks. It outlines the causal relationships between each stage of the process, from initial situation assessments to the realisation of long-term resilience goals.

The 'Logic Map' serves as a focused overview, ensuring that every element of the plan is aligned with key objectives—namely, preserving regional vitality and managing resources sustainably. It operates as both a planning guide and a communication framework, offering stakeholders a succinct visualisation of how their efforts support the region's overarching goal of achieving durable drought resilience. By presenting this at-a-glance summary, the Logic Map becomes a foundation of the plan's implementation, facilitating co-design across all levels of involvement. This plan recognises that resilience is not just about returning to pre-drought conditions but about evolving and strengthening our systems to better withstand future challenges.

[5] Investment logic mapping is an early-stage technique that assists in developing and documenting the logic that underpins a potential investment decision, before specific solutions are identified, and before a decision is made. Note: The program 'Logic Map' does not represent a theory of change.

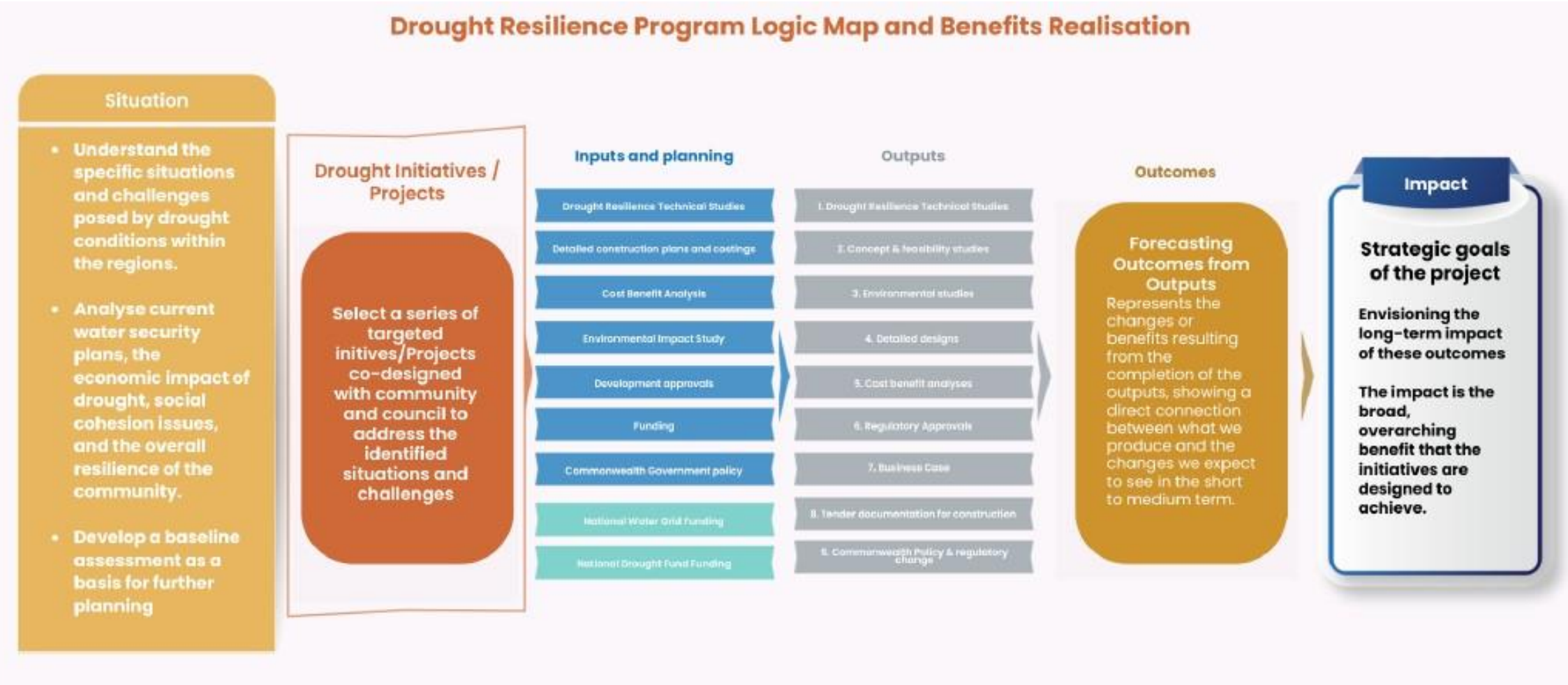

Figure 5 – Drought Resilience Logic Map (The Stable Group, 2024)

A PLAN FOR DROUGHT RESILIENCE

The *Regional Drought Resilience Planning (RDR PLAN) program* is one of the five focus areas of the Commonwealth Government's *Future Drought Fund*. The NSW RDR Plan program is jointly funded through the Australian Government's Future Drought Fund and the NSW Government, supporting local governments to work together regionally to plan for drought resilience proactively and pragmatically. The resulting plans focus on innovative ways to build regional drought resilience, taking steps to plan now to stem the impact of future drought on our region.

Objectives

Consistent with the strategic priorities and objectives of the Future Drought Fund Agreement, the objectives of the RDR Plan for Bourke, Brewarrina, Cobar and Walgett Shire Councils are to:

- Develop the agricultural sector's self-reliance and economic performance:
  - Promote diversification within the agricultural sector to reduce dependence on traditional farming.
  - Strengthen local supply chains and improve infrastructure to support agricultural productivity and resilience.
- Develop the environmental resilience and natural capital of agricultural landscapes:
  - Promote sustainable land management practices that protect and enhance natural ecosystems, such as the Macquarie Marshes and other critical habitats.
  - Enhance groundwater resources for agricultural and domestic use, ensuring equitable access to water across the region.
- Strengthen the social capital and wellbeing of the communities:
  - Foster social cohesion to mitigate the impacts of isolation and mental health challenges.
  - Improve telecommunications and digital connectivity to reduce social isolation and support community and economic activities, particularly in remote areas.
  - Support volunteer networks and reduce volunteer fatigue by providing resources and recognition for community contributions.
- Understand and plan for the region's current and future drought resilience by identifying actions, pathways, and opportunities for mitigation, adaptation and improvement:
  - Engage with diverse community groups, including First Nations people, young families, and youth to co-develop and continuously refine resilience strategies.
  - Ensure ongoing consultation and engagement with stakeholders to adapt strategies to changing climatic conditions and emerging challenges.

To further the collective efforts of the FNWJO and the Bourke, Brewarrina, Cobar, and

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Walgett Shire Councils in preparing communities to manage future and extended periods of drought, as well as improving water security, there is a need to identify projects for inclusion in the RDR Plan.

The objectives of this plan were derived from the initial extensive in-person consultation, with workshops held across 10 townships – Cobar, Euabalong, Bourke, Louth, Brewarrina, Hebel, Lightning Ridge, Walgett, Collarenebri and Come-By-Chance, attended by 92 community representatives (~13% under 40). The attendance of representatives from NSW Farmers, Progress Associations, Chambers of Commerce, environmental groups, the mining industry and agricultural industry, as well as active community participants, meant that the objectives that guided the project reflect the wider community needs, rather than being constrained to a particular group.

This plan identifies the priority projects (including an implementation pathway), to achieve the outcomes and objectives of the RDR Plan.

Strategic Alignment

The Far Northwest RDR Plan is consistent with National Framework for Drought Policy (National Drought Agreement) and Australian Government Drought Response, Resilience and Preparedness Plan. The Plan has a focus on long term resilience and preparedness. The Plan also has strong alignment with national, state, regional and local plans, strategies and policies[6] including the:

- NSW State Infrastructure strategy – guiding principles:
    - **Strengthen service reliability and resilience** – investments in existing assets should focus on lifting the reliability of those assets and resilience of communities most at risk of disruptive events.
    - **Optimise existing assets and networks** – opportunities to fully utilise existing assets should be prioritised, including through augmentation of existing networks, maintenance and upgrades.
    - **Partner with local governments and communities** – engagement and involvement of local governments, communities and other stakeholder groups should be embedded throughout planning, design, delivery and operation.
- NSW Water Regions priorities and objectives.
- Regional Economic Development Strategies (REDS) for the applicable Functional Economic Region (FER).
- Local Government Area Integrated Water Cycle Management / Regulatory and assurance framework for the local government councils / water supply authorities exercising water supply and sewerage functions and the Local Government Act 1993 or the NSW Water Management Act 2000.
- Regional Water Strategy for the Local Government Area.

Further, the development of the plan also included consideration of:

[6] Refer to Appendix 3 – Background Contexts and Key Inputs for the alignment and relevance of studies, Global academic and government derived strategies to the Plan.

- Investment logic mapping.
- CSIRO Regional Drought Resilience Plans, Independent Review Guide.
- NSW Department of Planning and Environment – Water guidance notes for options assessments.
- Regional NSW – Business Case and Strategy Development Fund Regional Infrastructure Business Case Template.
- Alignment to the competency of the local water authority (ability to fund and operate).
- Consideration of the Objectives of the Australian Government Future Drought Fund.

ABOUT THIS REGIONAL DROUGHT RESILIENCE PLAN

Purpose of the Plan

The Far Northwest RDR Plan has been developed in accordance with the guidelines set within the NSW Government Regional Drought Resilience Program. Through co-design, knowledge sharing, and strategic action, with key stakeholders and the voices and experiences of the region's people, the RDR Plan seeks to:

- Build strong, resilient social and community networks that are essential for thriving in an uncontrollable and often harsh climate, through fostering the ability of the communities to adapt and transform in response to social, environmental, and economic shocks and uncertainties, ensuring continuity and support during times of crisis.
- Foster connectivity within and across the communities in the region, contributing to great social capital, well-being, and security.
- Empower these communities to implement transformative activities that enhance their resilience to drought and support sustainable natural resource management, through measures to adapt to changing conditions and mitigate the impacts of drought on industries beyond agriculture, such as tourism, local business, and services, thereby sustaining overall economic vitality of the region.
- Mitigate the economic, social, and environmental impacts of drought, ensuring the long-term productivity and sustainability of the region.
- Improve the region's effective adaptability and maintain economic vitality through sustainable practices and careful stewardship of both human and commodity resources.

The RDR Plan process is intended to be practical, implementable and ongoing. As the region undertakes the specified actions, this plan will assist with monitoring progress and future learning.

The Process for RDR Plan Development

The planning process for the Far Northwest region: incorporating Walgett, Bourke, Brewarrina and Cobar Shire Councils involved a four-stage process (Figure 4).

1. A broad governance structure.

2. A Regional Drought Assessment to provide a robust evidence base using wide consultation ○ Consultation with the Bourke, Brewarrina, Cobar and Walgett communities.[7]

    - Engaged in widespread consultation with 92 diverse community representatives across the Bourke, Brewarrina, Cobar, and Walgett

[7] Refer to the Stakeholder Engagement Plan and Consultation Report at Appendix 5.

regions, reflecting a multi-hat community spirit, evident from the 10 community consultation gatherings.

- Captured a broad range of interests, from Local Shire Councillors to cotton ginners, health workers, and environmental groups, among others.
- Throughout the consultation period, various media channels encouraged community participation.

- Initial identification of the Council's priorities.
- Review of related Federal and NSW Government policies, initiatives and potential assessment criteria related to potential projects under the program.
- Review of over 40 community strategic plans, economic development strategies, drought management plans, regional water strategies, etc; to determine past and future impacts of drought and identify existing commitments. These included:
  - Council Community Strategic Plans.
  - NSW Government's Regional Economic Development Strategies (REDS) for each of the Functional Economic Regions (FER).
  - Barwon – Darling Valley Annual Surface Water Quality Report.
  - Far West Enabling Regional Adaptation Report.
  - Far West Regional Plan.
  - Western Regional Water Strategy.
  - Macquarie – Castlereagh Water Strategy.

3. The Regional Drought Resilience Plan, which provides a high-level summary of the findings. The Plan includes actions and interventions to mitigate drought impacts in the region.
   - Further engagement and visits to the Bourke, Brewarrina, Cobar and Walgett regions.
   - Following the workshops, four written submissions and three telephone calls offered more insights, rounding out the understanding of the community's concerns.
   - Development of Technology Report, listing the Priority Drought Resilience Projects and information developed for each Project.
4. An Investment Framework ○ Development of a pathway for each of the priority projects to be taken forward.
   - Provision of the draft plan for comment by the FNWJO and Councils. ○ Provision of the final plan to the FNWJO.

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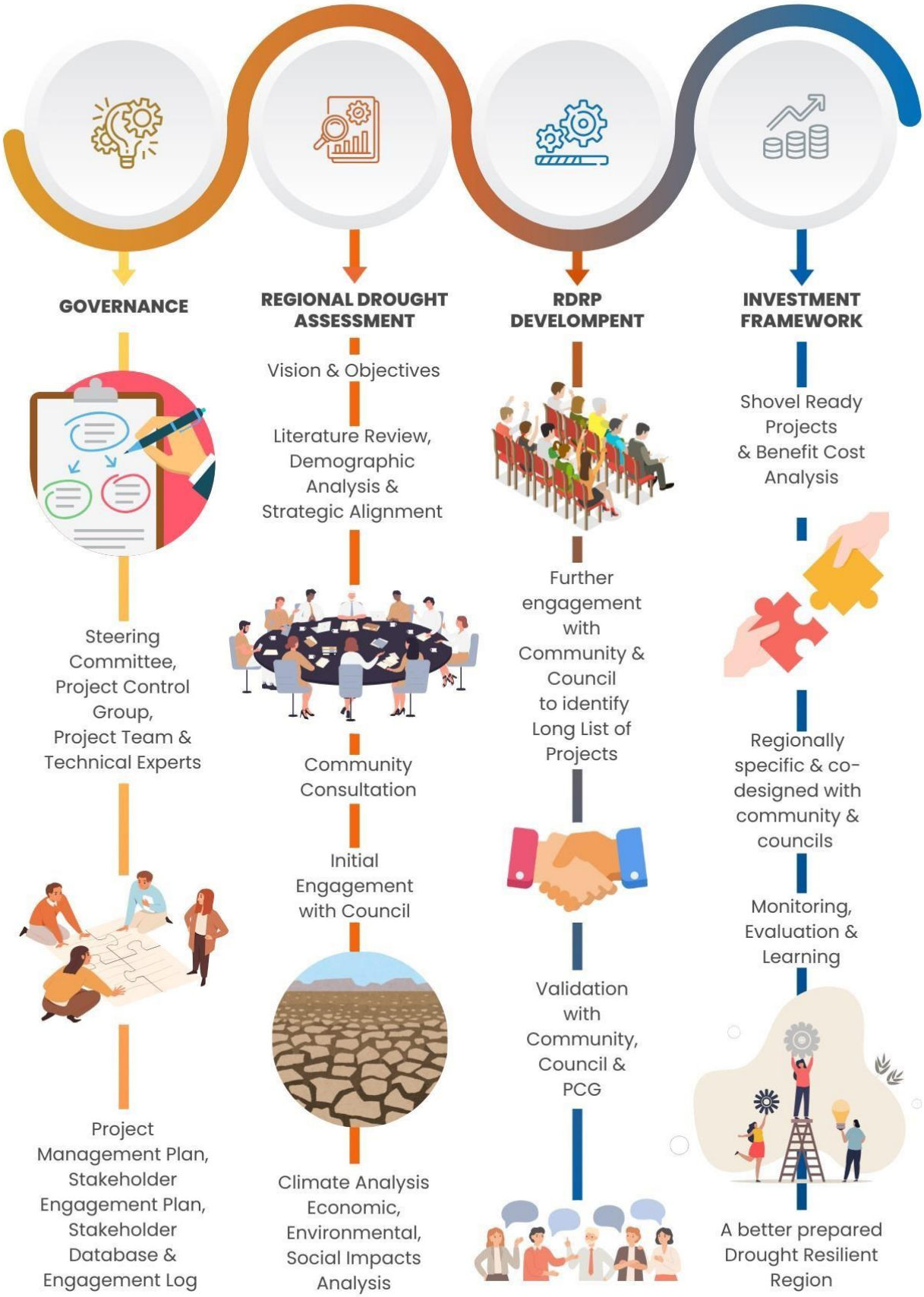

Figure 6 – Process for RDR Plan Development. (The Stable Group, 2024)

BACKGROUND CONTEXTS & KEY INPUTS

This plan draws from, complements, and builds upon previous work in developing a regional profile and identifying the impacts of past and future droughts. (Refer to **Appendix 3**.)

Other Important Linkages

It is the intention of this Plan that it is considered and factored into a range of other strategies and plans – including (but not limited to) the following list.

- regional plans,
- regional economic development strategies,
- regional transport and infrastructure plans,
- natural resource management plans,
- water resource plans,
- local and district disaster management plans,
- local asset management and capital works plans,
- local corporate and community development plans,
- land use planning schemes, and
- local and regional health strategies.

The intention is also, that this plan will be closely considered by charities; non-government organisations; not-for-profits; businesses; and government agencies with an interest in the region.

Our Partners

Broad stakeholder engagement was conducted in developing the RDR Plan. This included contributions from the Stable Group and the Far Northwest Joint Organisation. The Project Reference Group provided essential local insights, helping to refine strategies and define drought resilience actions.

In February, from the 9th to the 19th, initial consultations with communities in Bourke, Brewarrina, Cobar, and Walgett led to the development of a long list of projects (**Appendix 4**). These were further refined through a second round of consultations to align with community priorities, ensuring that the proposed actions met local needs. Further sessions, conducted via Microsoft Teams, engaged representatives from all four Shires, despite lower attendance compared to earlier meetings. Further community consultation was conducted, and a survey was circulated to gather additional input on project prioritisation, receiving feedback from nine community members.

Community consultations, coordinated closely with local councils and regional management bodies, adhered to strategic priorities of economic, environmental, and social resilience. These sessions utilised the Drought Resilience Logic Map to focus discussions on understanding community perceptions, drought-related risks, and potential resilience actions.

FAR NORTH WEST JOINT ORGANISATION

The stakeholder engagement extended over a significant period, drawing on a broad spectrum of the community, which included a multitude of organisations and businesses. This was complemented by a commissioned review of drought innovation, identifying potential transformative projects across multiple resilience research areas such as water management, digital technology, and community development. (Refer to **Appendix 5**).

Figure 7 – Process for RDR Plan Development. (The Stable Group, 2024)

This early engagement facilitated the integration of diverse regional knowledge and expertise, culminating in a collectively owned, region-specific plan. This process not only identified key regional priorities but also ensured the plan was co-designed with the community and council to address the unique challenges and opportunities in Far Northwest NSW.

FAR NORTH WEST JOINT ORGANISATION

REGIONAL PROFILE

The portion of the Far Northwest region which is covered by this plan covers an area of 127,268 km^2, and includes the Bourke, Brewarrina, Cobar and Walgett Shire Councils (Figure 5). It is home to approximately 13,341 people.
The region is located on Ngemba and Gamilaraay Country and resident Aboriginal language groups include the Ngiyampaa, Wangaaypuwan, Wayilwan and Gamilaroi people.

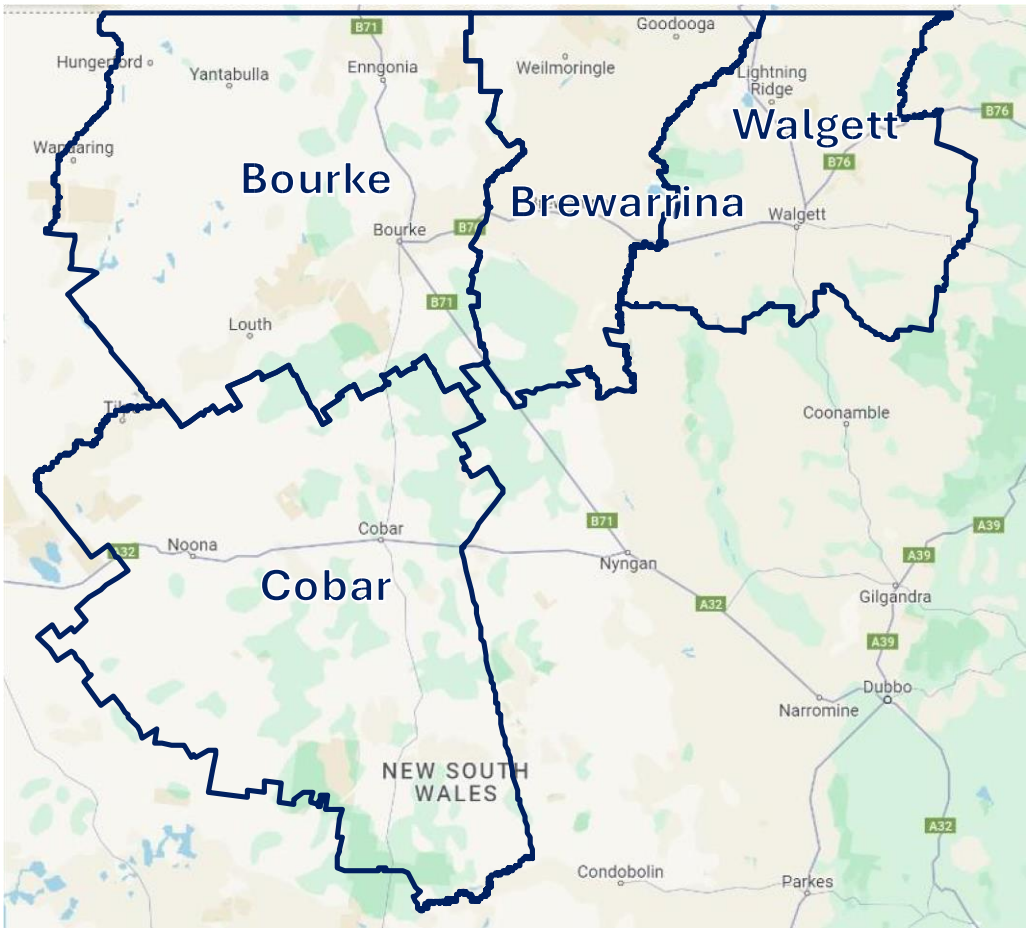

Figure 8 – Map of Region that the RDR Plan covers with Bourke, Brewarrina, Cobar and Walgett Shire Councils labelled. (The Stable Group, 2024)

The key-socio-economic statistics for the Far Northwest regions and each of the four LGAs.

FAR NORTH WEST JOINT ORGANISATION

Figure 9 – Socioeconomic Profile of Individual Local Government Areas (Source: ABS, REMPLAN, NEMA, 2024)

FAR NORTH WEST JOINT ORGANISATION

Natural Landscape of the Region

The Far Northwest region of New South Wales encapsulates a rich tapestry of natural landscapes ranging from semi-arid desert plains to fertile farmlands, rangelands and wetlands. These landscapes not only define the physical character of the regions but also underpin their ecological, cultural, and economic vitality.

Geographical Overview and Biodiversity

This area includes diverse natural features that include:

- Darling River: Acts as a vital water source and ecosystem supporting a variety of aquatic life.
- National Parks and Conservation Areas: Protects significant biodiversity and offers sanctuary to numerous species.
- Flora and Fauna: The region's flora and fauna have adapted to the arid conditions, showcasing a range of species that thrive in extreme environments. Endemic plants and animals contribute to the area's ecological diversity and resilience.

The geographical diversity of these regions supports a wide range of ecosystems, each with unique biodiversity, as follows:

- Bourke and Brewarrina are characterised by their semi-arid climate, expansive landscapes and vast flat plains.
- Bourke shire is home to the Toorale and Gundabooka National Parks, featuring diverse ecosystems including vast grassy woodlands, significant rock formations and vital wetlands that host a variety of waterbirds, including internationally protected migratory species.
- Brewarrina boasts unique ecological systems including the Brewarrina Ngemba Billabong; recognised as an Indigenous Protected Area and a World Conservation Union Category V and VI protected area. It is home to the Brewarrina Aboriginal Fish Traps, estimated to be over 40,000 years old, representing one of the oldest humanengineered structures and a critical heritage site.
- Vegetation in Cobar primarily includes mulga woodlands, shrublands and native grasses, supporting diverse wildlife accompanied by rocky ranges which provide habitat for a range of native and endangered species.
- Walgett Shire also features a mix of grasslands and woodlands and is further renowned for its wetland ecosystems found in the fertile plains of the Namoi, Barwon and Gwydir Rivers.

Ongoing conservation efforts aim to protect and preserve the unique biodiversity of the Far Northwest. These include initiatives to manage invasive species, rehabilitate damaged ecosystems, and ensure sustainable water usage that supports both human and ecological needs.

FAR NORTH WEST JOINT ORGANISATION

Agricultural Land Use

Agriculture forms the backbone of the Far Northwest Region economies with land predominantly used for cropping and grazing. Bourke Shire benefits from access to the Darling River, enabling diversification into irrigated agriculture, particularly cotton. Cobar and Walgett focus predominantly on broadacre, dryland farming and livestock grazing reflecting the adaptation to the semi-arid climate. A majority of Brewarrina's agricultural land is used for livestock grazing, with broadacre cropping efforts predominantly focused on cereal crops. The harvesting of feral goats has provided a valuable source of income for graziers, particularly in Cobar and Bourke.

The following tables outline the primary agricultural activities, along with the key crops or livestock associated with each Shire.

Bourke Shire	
Total area of LGA (ha)	4 159 837
Primary Agricultural Activity	Broadacre cropping, Irrigated cotton, sheep grazing and wool production.
Total area of broadacre crops (ha)	16 716
Total gross value agricultural production ($m)	77.7

Brewarrina Shire	
Total area of LGA (ha)	1 916 203
Primary Agricultural Activity	Sheep grazing, wool production, cereal cropping and a small cotton industry.
Total area of broadacre crops (ha)	93 650.3
Total gross value agricultural production ($m)	121.6

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Cobar Shire	
Total area of LGA (ha)	4 557 535
Primary Agricultural Activity	Sheep and cattle grazing, broadacre dryland farming.
Total area of broadacre crops (ha)	46 339.3
Total gross value agricultural production ($m)	51.3

Walgett Shire	
Total area of LGA (ha)	2 230 825
Primary Agricultural Activity	Sheep and cattle grazing, broadacre dryland farming, cereal cropping.
Total area of broadacre crops (ha)	451 312.3
Total gross value agricultural production ($m)	465

Figure 10 - Primary Agricultural Activities of each Local Government Area.
(Source: ABS, REMPLAN, NEMA, 2024)

Natural Water Resources and Management

During the most recent drought, from January 2018 – January 2020, the Barwon-Darling Valley experienced extreme hot and dry conditions, which led to substantial reductions in river flow and water quality, as well as impacted community water and supplies and aquatic habitats.

Availability of, and access to water from both groundwater and surface water resources is an essential enabler of diversity and prosperity of communities, agriculture and industry in the Far Northwest Region. Given the variability of rainfall and historic droughts, current efficient water uses and sustainable management practices are an essential part of the lived experience.

Existing strategic planning efforts and recent community consultations have endorsed water efficiency and water management as a critical concern across the Far Northwest Region. The Far Northwest Region supports strategic planning efforts which address the challenges of water security not only for communities, but for environmental, agricultural and industrial sustainability of their communities.

Water is a highly valued and emotive resource, and the Far Northwest Region is under continuous threat from government plans to lower weir walls; perverse outcomes of water policy; inaction; and high costs and slow processes. Community have expressed a frustration caused by inactivity on water management during RDR Plan consultation. Examples include:

- **NSW Government Fish Passage**. Reconnecting the Northern Basin Project: Plans to upgrade fish passages across the Northern Basin involves lowering and modifying weir walls to enable the construction of a variety of different fishways such as Fish Locks. The project will reduce the storage capacity of weir pools and resultant duration of water availability in subsequent droughts. In the 2018-19 drought, without these weir adaptations, weir pools at Brewarrina and Collarenebri ran dry, and therefore these planned changes will exacerbate the frequency and speed at which the weir pools along the Northern Rivers are emptied.
- **Perverse outcomes of government Water Buyback Policy as part of the Murray Darling Basin Plan (MDBP)**. Under legislation that was updated in 2023, another 450 gigalitres of water must be bought back from Murray Darling irrigators by the government by 2027. To date, under the Basin Plan, 83GL have been recovered from the Macquarie Valley, above and beyond the legislated target of 65GL, and dramatically higher than the 20GL originally proposed by the Murray Darling Basin Authority (MDBA) in 2010. Water buybacks have contributed to job losses, people departure and decreased water security in the Barwon-Darling Region and the continued over recovery of environmental water will have negative social, environmental and economic costs.
- **Inaction**. Cobar receives water via the Albert Priest Channel from the Macquarie River. Evaporation rates are high and recommendations of the Water and Drought Security Report to line the channel or pipe the channel have not proceeded. As demonstrated by the very effective Cap and Pipe the Bores Scheme, more efficient movement of water and conservation of water would give industry security into the future enabling investment and creating employment opportunities.

Below is a table that provides an insight into the key natural water resources within each Shire:

Shire	Key Natural Water Resource	Use
Bourke	Darling River	Irrigated agriculture, Agriculture, Town Water supply
Brewarrina	Barwon River	Agriculture, cotton farming, livestock watering, town water supply
Cobar	Bogan River and Macquarie River via Albert Priest Channel	Mining, livestock watering, town water supply
Walgett	Namoi River and Barwon River	Irrigated agriculture, cotton farming, town water supply

Figure 11 – Key Natural Water Resources of each Local Government Area

Regional Weather and Climate Characteristics

The Far Northwest of New South Wales is experiencing significant changes in its weather and climate characteristics, which are expected to have profound impacts on the region's natural landscape, economy, and societal well-being. These changes are being driven by global climate change, manifesting in increased temperatures, altered precipitation patterns, and more extreme weather events.

Far Northwest Regional Weather and Climate Characteristics include:

- Average maximum temperatures during summer ~ 36°C.
- In winter, the average minimum temperature ranges from 4-6°C
- Over 70 hot days are experienced in the north-west of the region around Bourke.
- Majority of the Far Northwest Region experiences fewer than 20 cold nights (<2°C) per year.

Rainfall across the Northwest Region demonstrates a gradient from east to west. Walgett mean rainfall is 437.3mm annually, transitioning to approximately 390mm in Cobar and 380mm in Bourke. This gradient is mirrored and exacerbated by evaporation rates, underscoring the challenges of water management in areas where evaporation outpaces rainfall.

The following table describes the climate characteristics for different periods and their impacts on the Far Northwest Region:

Period	Characteristic	Impact on Barwon–Darling Valley
1900s to 1940s	Dry Period	Marked by short to decadal droughts, setting a precedent for dry conditions.
1950s to 1990s	Wet Period	A relatively moist interval, providing relief and replenishing water sources.
Post-Millennium Drought	Return to Dry Period	Illustrated by extreme variability, significant droughts and flooding events.

Figure 12 - Key Natural Water Resources of each Local Government Area

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Society, Population and Demographics

The Far Northwest region of New South Wales embodies a vast and sparsely populated area with a profound Aboriginal heritage. This unique demographic landscape is shaped by its remote and rural character, which significantly influences population distribution, age demographics, workforce participation, and socioeconomic status.

Population Distribution and Trends:
The Far Northwest region is characterised by significant logistical and socio-economic challenges, partly due to the extensive distances between communities and towns. The average travel time of three hours between main towns complicates service delivery, economic development, and community cohesion. This geographical isolation is a critical factor in the complex set of challenges the region faces, including ensuring sustainability and prosperity. The demographic trends in the Far Northwest region show a concerning trajectory, with an expected population decline of 11% over the next 15 years. Since 2018, there has been a noticeable decrease of 1.8% in the population. This downward trend is compounded by a significant shift within age demographics: a 16% decrease in young people, a 24% decrease in the working-age population, and a 48% increase in the proportion of the population over 65 years.

Younger generations' attitudes towards agriculture and traditional livelihoods are changing, exacerbated by concerns over work-life balance and climate change uncertainty. There is a trend of seeking more stable and less stressful careers outside the region, leading to a drain of vital human capital. This is reflected in a 13.6% reduction in employment within the agricultural sector from 2001 to 2020 and a shift in primary industry from agriculture to public administration and safety.

Demographic Asset	Detail
Population Trend (2018 – 2033)	Expected decline of 11%.
Population Change (Since 2018)	Decrease of 1.8%.
Age Demographics Change	• Young People: -16%
Demographic Asset	**Detail**
	Working-age Population: -24% Over 65: +48%
Workforce Participation (Aboriginal Communities)	Cobar: Higher due to mining jobs. Brewarrina: Lower, limited to agricultural and administration sectors. Walgett and Bourke: Primarily in service and labour sectors.
Migration Trends	High outwards migration correlated with drought periods.
Primary Industries Shift	From agriculture to public administration and safety.
Employment in Agriculture (2001 – 2020)	Decrease of 13.6%.

Figure 13 - Population, industry and migration trends across Bourke, Brewarrina, Cobar and Walgett Shire Councils. (Source: ABS, REMPLAN, NEMA, 2024)

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Census Information	Population of Bourke LGA	Population of Brewarrina LGA	Population of Cobar LGA	Population of Walgett LGA
2001 Census Year	**3899**	**2056**	**4105**	**8279**
2021 Census Year	**2340**	**1356**	**3369**	**1781**
Total population loss	**- 1559**	**- 700**	**- 763**	**- 6498**
Average change per annum	**-77.95**	**-35**	**-36.8**	**324.8**
% loss over 20 years	**40%**	**34%**	**18%**	**78%**

Figure 14– Population declines of the Far Northwest Region 2001-2021. (Source: ABS, 2024)

A key characteristic of the population in the Far Northwest Region is the aging population, placing additional pressure on aged care service delivery, healthcare, and community support structures. The Far Northwest Region is also challenged by the outmigration of younger people to regional centres such as Dubbo or to larger cities in search of education and employment opportunities.

Despite the obvious trend, each Council remains optimistic and embraces opportunities to improve the liveability of their community and attract skilled workers. For example:

- Bourke continues to undertake positive initiatives to encourage community growth, as demonstrated by the redevelopment in the agricultural sector and continued improvement in the tourism sector. Efforts to improve local infrastructure and the town's amenity are also aimed at increasing the resident population.
- Brewarrina and Walgett have both witnessed fluctuating population trends, largely influenced by employment opportunities in the agricultural and administration sectors.

  Efforts to diversify the local economy and business life, particularly related to agriculture, the service industries and tourism, aim to stabilise both community's populations.
- Cobar's strong mining sector plays a key role in attracting skilled workers to the area. The Cobar Shire Council recognises the need to improve community

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services and facilities to attract new residents whilst also strengthening its key mining and agricultural business sectors.

Aboriginal Communities:
The region's significant Aboriginal population is deeply intertwined with the cultural and historical fabric of the area, exemplified by the Brewarrina Aboriginal Fish Traps. Despite the cultural significance of such sites, Aboriginal communities face challenges, including barriers to accessing water rights and issues impacting community cohesion.

Workforce participation rates and employment sectors for the Aboriginal populations within the region reveal disparities and opportunities unique to each community. While Cobar benefits from the mining industry, offering employment opportunities to its Aboriginal population, communities in Brewarrina, Walgett, and Bourke face challenges related to the availability of jobs, particularly those not requiring specialised skills.

Built Form and Infrastructure

Transportation and Connectivity:
The vast Far Northwest region relies heavily on its road network for transportation and connectivity, linking small, remote communities to key centres such as Bourke and Cobar. This network is vital for the movement of goods, access to services, and community interaction. Although primarily served by roads, all centres in the region are also linked by rail-supported bus services, enhancing accessibility.

Public transportation options, while limited, include several air services that bolster connectivity for remote communities:

- Cobar has direct flights to Sydney every weekday.
- Walgett and Bourke have air services to Dubbo three days a week.
- Lightning Ridge is served by flights two days a week.

These services are crucial for reducing travel times and improving access to broader domestic networks. However, the primary challenge remains maintaining and upgrading road infrastructure to ensure safe and efficient travel. Seasonal weather conditions, such as heavy rains and floods, can quickly deteriorate road conditions, leading to closures and access issues. The lack of more extensive public transportation options further exacerbates the isolation of these communities, limiting access to essential services and opportunities.

Enhancing road safety through upgrades and maintenance, alongside improving public transportation infrastructure, such as bus services between towns, could significantly benefit residents, especially those without personal vehicles. This is a key opportunity to support the region's connectivity and overall community well-being.

Water Security:
Water security is a critical issue in the arid Far Northwest region, where access to reliable and clean water sources underpins the health of communities, agriculture, and ecosystems. The region's current water infrastructure, is designed to manage the scarce water resources, and includes:

- **Dams and Weirs**. The region relies on a network of dams and weirs to store and regulate water supply. These structures are crucial for capturing rainfall and runoff, providing water for towns, agriculture, and environmental flows. Major dams like

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the Menindee Lakes System play a vital role in water storage and management, though they also reflect the challenges of evaporative losses and managing water in times of drought.

- **Water Treatment Plants.** Water treatment facilities are essential for ensuring that water drawn from dams, rivers, and borefields meets health standards for consumption. These plants use various processes to filter and disinfect water, but they require ongoing maintenance and upgrades to handle the demands of changing water quality and new health regulations.
- **Borefields.** Groundwater accessed through borefields supplements surface water sources, particularly during periods of drought. The use of borefields requires careful management to prevent over-extraction, which can lead to declining water levels and quality.
- **Pipelines.** A network of pipelines delivers treated water from dams, weirs, and treatment plants to communities. These pipelines are critical for distributing water across the vast distances of the Far Northwest but are subject to issues of aging infrastructure and leakage, which can lead to water loss.
- **Rainwater Harvesting Systems.** In more remote areas, individual properties and some communities rely on rainwater harvesting systems to capture and store rainwater for use. While this method provides a degree of self-sufficiency, it is heavily dependent on rainfall patterns, which can be variable and unpredictable.

However, these systems face increasing pressure from climate variability, population changes, and agricultural demands. The challenges in water security and management are multifaceted, including:

- **Aging Infrastructure.** Much of the water infrastructure, including pipelines and treatment facilities, is aging and requires significant investment to upgrade and maintain.
- **Climate Variability.** The increasing unpredictability of weather patterns and climate change poses challenges to managing water resources, with more frequent and severe droughts and floods.
-
- **Evaporation Losses.** High temperatures and sunlight contribute to substantial evaporation losses from open water storages, like dams and lakes, reducing the efficiency of water storage.

The variability in rainfall exacerbates these challenges, making water management a complex task that requires careful planning and innovation. There are significant opportunities to improve water security in the Far Northwest, such as:

- **Infrastructure Upgrades**. Investing in modernizing water treatment plants, pipelines, and dams can improve efficiency and resilience to climate impacts. Upgrades can include the introduction of advanced treatment technologies and leak detection systems in pipelines.
- **Sustainable Groundwater Use**. Implementing more sophisticated monitoring and management of borefields can ensure sustainable groundwater use, preventing overextraction and maintaining water quality.

- **Water Recycling and Reuse**. Expanding water recycling and reuse projects can alleviate pressure on fresh water sources, particularly for agricultural and industrial use.
- **Rainwater Harvesting Innovations**. Encouraging the use of advanced rainwater harvesting and storage solutions can enhance water security for remote and rural properties, making them less dependent on centralized water supplies.

Digital Connectivity:
Digital connectivity is crucial for the Far Northwest's economic development, access to services, and social inclusion. However, the region's remote and sparsely populated nature poses significant challenges to providing reliable and high-speed internet access. Coverage and service quality can be inconsistent, impacting businesses, healthcare, education, and communication. The vast distances and challenging terrain increase the cost and complexity of infrastructure development for broadband and mobile services.

The digital divide between urban and rural areas remains a significant issue, with some remote communities having limited or no access to reliable digital services. There is a significant opportunity to improve digital connectivity through the expansion of broadband networks, including fixed wireless and satellite services, to reach the most remote areas. Investing in digital literacy and technology education programs can enhance the community's ability to benefit from digital services. Collaborations between government, industry, and communities to fund and deploy digital infrastructure projects can accelerate improvements in connectivity.

> *"Poor connectivity has negatively impacted my business because I cannot respond quickly enough to jobs when driving in areas with no mobile coverage… by the time I reach mobile reception the job has already been given to someone else". – Jack (Louth)*

Future Investment Projects Shaping the Far Northwest Region

Current planned or ongoing investment projects of note that will have a significant investment and disruptive effect in the Far Northwest Region are:

- **Inland Rail**. A transformative infrastructure project enhancing freight efficiency, supporting over 21,500 jobs at peak construction, and providing long-term economic development opportunities.
- **Renewable Energy transition and Resource Sectors**.The region's transition towards renewable energy, including solar, wind, and bioenergy projects, is pivotal in driving economic diversification and reducing carbon emissions. With 75% of the state's coal-powered electricity generation expected to reach the end of its technical life within 15 years, the transition to renewable energy sources is underway. This transition will require significant infrastructure development to connect new energy sources.
- **Digital Connectivity**. Improvements in digital infrastructure to improve NBN and mobile services are vital for economic and social participation, particularly for smaller centres leveraging their locational advantages. “Black spots” are quite obvious to landowners and travellers between towns and villages
- **Mining**. Continued investment into Cobar’s mining sector has resulted in increased mining jobs and spending in the Shire. Participating mining companies directly spent
  $133 million in Cobar in 2023, supporting over 638 local jobs.[8]

Further water and energy security projects are critical for sustaining regional development, with projects aimed at ensuring reliable access to these essential resources.

A coordinated approach to planning and infrastructure development is essential to maximise investment benefits for the region and minimising the disruptive impacts. Strategic land use planning, lifestyle blocks and housing development, and infrastructure is essential to support the needs of the changing demographic and economic opportunities. Disruptive impacts may include:

- The increased reliance on a temporary workforce is impacting the economy of the Far Northwest Region towns. The proximity of some of the projects may provide drive-in-drive out opportunities for residents in competition with local job opportunities.
- Extra competition may arise to provide suitable local housing choices and services that cater to both temporary and permanent residents. Housing reserves are often run down and efforts to provide housing that meets the diverse needs of the community are crucial in supporting the region's growth and prosperity.

[8] NSW Minerals Council (2024) https://www.nswmining.com.au/news/2024/2/survey-confirms-increased-mining-jobs-andspending-in-cobar

Economy

The Far Northwest's economic landscape is significantly shaped by the activities within its towns, each contributing uniquely to the region's prosperity. Agriculture, mining, and public administration emerge as common threads, yet the scale and focus of these industries vary, influenced by each town's resources, heritage, and geographical context.

	Bourke LGA	Brewarrina LGA	Cobar LGA	Walgett LGA
Gross Regional Product ($M)	**194**	**70**	**491**	**319**
Value of Agriculture, Forestry and Fishing Economic Output ($M)	77.68	121.64	51.28	464.96
Value of Mining Economic Output	0	0	926 (2021)	0
Number of Jobs in Agriculture, Forestry and Fishing	163	86	184	444
Number of Jobs in Mining	0	0	638 (2023)	0
Total Jobs	2033	915	3537	3708

Figure 15: Gross Regional Product (GRP) and the economy by Shire. (Source: ABS, REMPLAN, NEMA, 2024)

Bourke's economy is deeply rooted in agriculture, with a strong emphasis on cotton, leveraging the town's access to irrigation systems. Livestock farming, particularly goat farming, also plays a crucial role. However, water security remains a persistent challenge, impacting agricultural productivity and sustainability. Public administration is vital in supporting the community's infrastructure and service needs, while tourism, particularly focusing on the town's rich cultural heritage and natural beauty, presents an opportunity for economic diversification. The development of eco-tourism and enhancements in agricultural practices offer pathways to bolster Bourke's economic resilience and growth.

Cobar stands out for its significant mining sector, tapping into the region's rich deposits of copper, gold, lead, and zinc which contributed to an economic output of $926.4 million in 2021. This industry not only drives Cobar's economy but also presents environmental and sustainability challenges that require innovative management and technology solutions. Agriculture, focusing on livestock, particularly goats, complements the mining sector, though it faces its own set of challenges, including workforce retention and sustainable water use. Public administration supports essential services and infrastructure, with

opportunities for growth lying in exploring new mineral resources and improving public amenities and services to enhance the quality of life for residents.

Brewarrina and **Walgett** share a focus on agriculture as a primary economic driver with an emphasis on livestock farming and Brewarrina has a small cotton industry, contributing to a GRP of $70 and $319 respectively. Agricultural activity, however, is heavily influenced by the region's climatic conditions and water availability, underscoring the importance of sustainable water management strategies. Public administration plays a crucial role in both towns, providing essential services and supporting community well-being. Tourism, particularly cultural and heritage tourism, offers a promising avenue for economic development, tapping into the rich Aboriginal heritage and natural landscapes of the area. Strengthening the tourism infrastructure and promoting these unique cultural experiences can attract visitors and stimulate local economies.

The Far Northwest of New South Wales faces three main economic challenges that impede its growth and sustainability. These include:

- Climate variability and water security exert a profound impact on the cornerstone industries of agriculture and mining, leading to increased production costs and reduced operational viability.
- The region's geographical isolation exacerbates transportation and logistics costs, diminishing the competitiveness of local businesses on a broader scale.
- A skilled workforce shortage also presents a critical challenge, particularly in vital sectors such as healthcare, education, and mining, making it difficult for these industries to attract and retain the talent necessary for their advancement and development.

Conversely, the region harbours a wealth of opportunities that, if leveraged, could propel significant economic development. Renewable energy projects, for instance, are a promising avenue, with the Far Norhwest's expansive landscapes and high solar insolation rates making it an ideal candidate for large-scale solar and wind energy initiatives, thereby diversifying, and adding sustainability to the economy.

The potential for tourism is vast, with the area's natural attractions, rich cultural heritage, and unique landscapes offering a solid foundation for sector growth. An investment in technology and innovation across key sectors like agriculture and mining promises to enhance efficiency and productivity while providing access to global markets. Additionally, focusing on infrastructure development, particularly in transportation, water, and digital connectivity, can catalyse economic growth by improving overall connectivity, ensuring water security, and broadening access to essential services.

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Our History of Drought Impacts

Of all the climate and weather-related conditions that affect Australia, drought is often the most challenging. New South Wales (NSW) in particular, is prone to periods of persistent drought.

Droughts are a natural and recurring feature of the Australian climatic cycle. As such, droughts will come again, and they are anticipated to get worse. Droughts are challenging times, not just at the farm gate. Droughts do not appear suddenly like other natural disasters or events. They are incremental and start with a dry spell that becomes persistent.

(Regional Drought Resilience Planning: Project Narrative, NSW Government)

The impact of drought in the Far Northwest regions of Bourke, Brewarrina, Cobar, and Walgett, reveals a multifaceted challenge that spans environmental, economic, and social dimensions. Droughts are stressful for farmers, communities and those providing services in the region. Conversely, drought also highlights the resilience and adaptive measures being employed to mitigate these impacts.

Figure 16 - Farm in drought conditions in the far north west of NSW (NSW Agriculture)

Drought Declaration

Australia has highly variable rainfall records and highly variable periods of low rainfall. Drought is difficult to predict, and difficult to determine a start point as the creeping reality of a “dry period” becomes more severe and pervasive. Droughts are difficult to compare with differences in seasonality, extent, duration, severity, among other variables all contributing to the drought experience[9]. The end of a drought is also difficult to declare with the distressing economic and social impacts being felt long after the landscape has recovered.

Drought in Australia, redefined in policy approaches since the 1990s from a 'natural disaster' to a 'manageable risk', places farmers in the role of risk managers tasked with planning for recurring drought events rather than as victims of unforeseeable catastrophes. This shift underscores the complexity of drought as not just a meteorological event but a socioeconomic crisis that requires a proactive and informed response from all sectors of society.

The Bureau of Meteorology has four definitions of drought[10][11], which are meteorological, agricultural, hydrological and socio-economic.

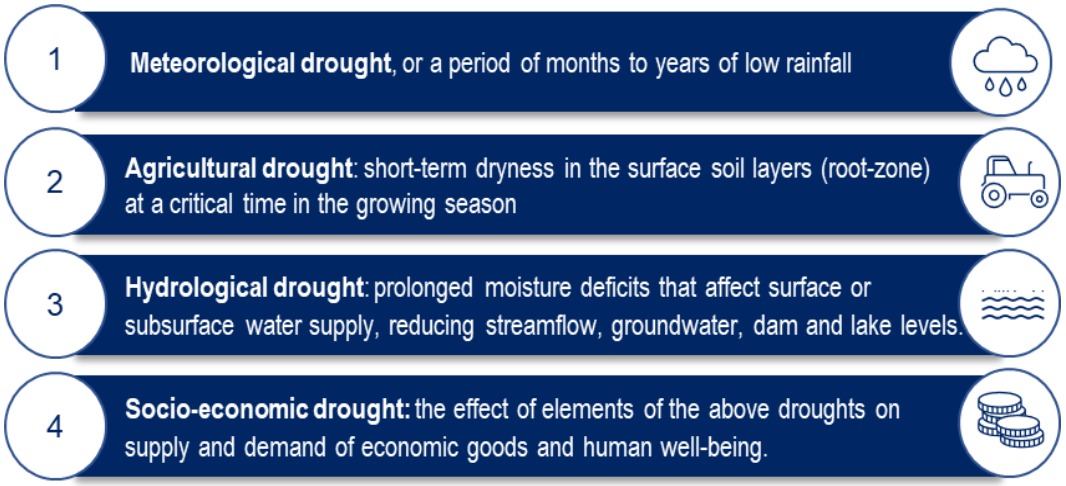

Figure 17 - Bureau of Meteorology Four Definitions of Drought (BoM)

A key feature of the Enhanced Drought Information System (EDIS) is the development of the NSW DPI Combined Drought Indicator (CDI). The CDI integrates a range of data and model outputs in a framework that is useful for decision makers. It combines meteorological, hydrological and agronomic definitions of drought using indexes for rainfall, soil and water and plant growth. From these, a fourth index, drought direction (DDI), is developed[11].

[9] Bureau of Meteorology Drought Knowledge Centre on-line http://www.bom.gov.au/climate/drought/knowledge-centre/

[10] Bureau of Meteorology Drought Knowledge Centre on-line http://www.bom.gov.au/climate/drought/knowledge-centre/

[11] Enhanced Drought Information System on-line https://edis.dpi.nsw.gov.au/cdi-drought-phases

Used together, the indices classify six stages of drought. The six stages progress from a non-drought stage where all indicators suggest good conditions for production to recovery, drought affected and improving, drought affected and worsening to fully drought affected.

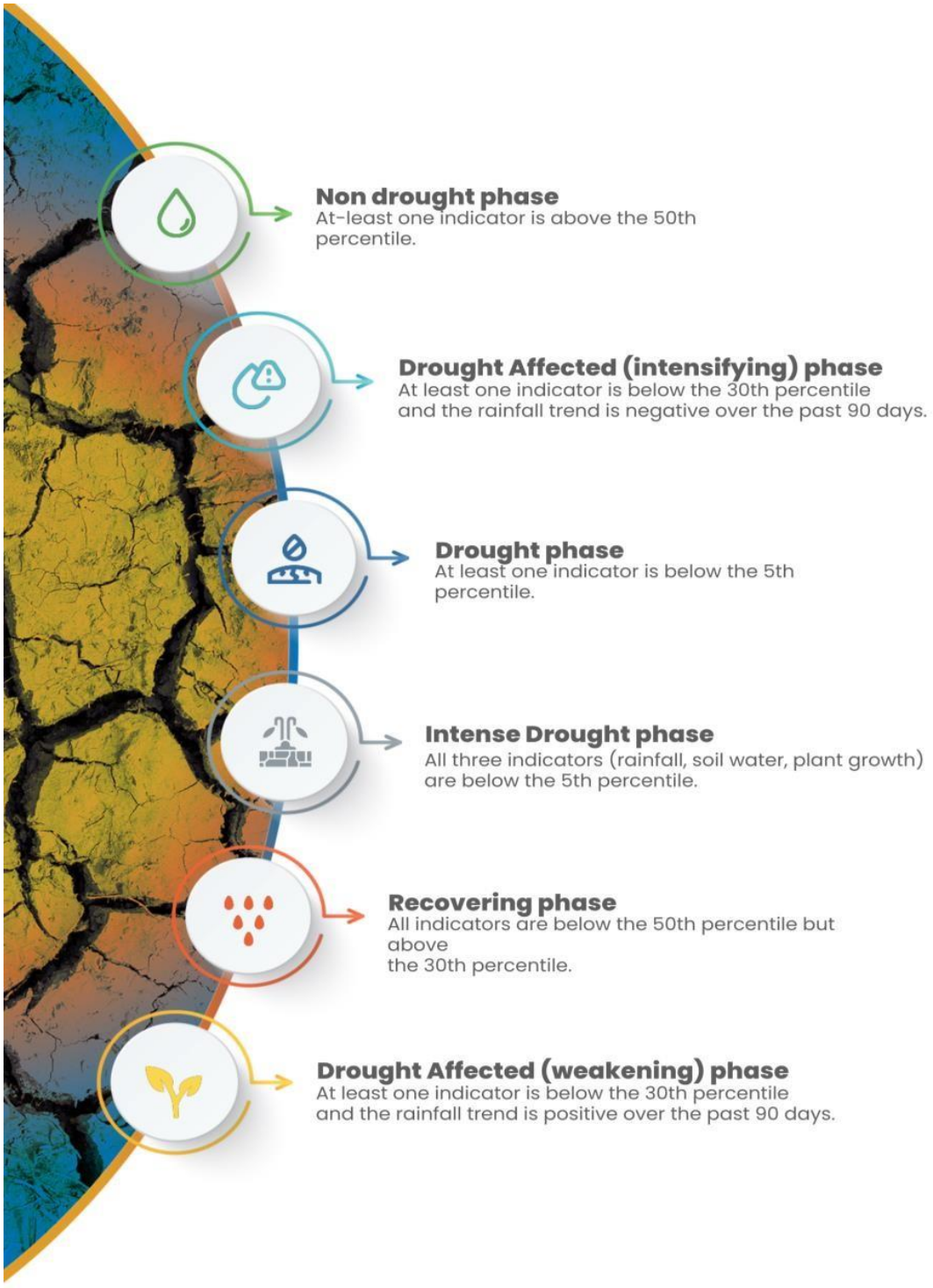

Figure 18 – Stages of drought in NSW adapted from NSW DPI Combined Drought Indicator Drought Stages (Adaptation of source: Enhanced Drought Information System (EDIS))

Drought Impacts on Agriculture

The onset of the drought in 2017, less than 10 years after the Millennium Drought, left little time for primary producers to recover and protect themselves against future crises, exacerbating the social and economic impacts of the current drought.

(Regional Drought Resilience Planning: Project Narrative, NSW Government)

The agricultural industry, vital to the Far Northwest Region, is deeply affected during drought. Initially in a “dry time” or Drought Affected (Intensifying) Phase, conditions are deteriorating; production is beginning to get tighter. Ground cover may be modest, but growth is moderate to low for the time of year. This phase is met with changes in productivity such as:

- weaning and destocking, (selling livestock before they reach their potential),
- purchasing fodder (to sustain the core herd),
- changes in farming plans (eg choosing not to plant, spray, fertilise), or
- reduced yields.

During Drought Phase conditions become very dry and there is low soil moisture or plant growth. As Intense Drought Phase becomes apparent ground cover is low and soil moisture stores are exhausted, ongoing decisions are required to sustain the farming business such as:

- Economic decisions to reduce spending on investment items, to renegotiate loan arrangements, or to seek off farm income. Flow on effects spending cutbacks are felt in the local towns with less money being spent on agricultural supplies and reduced employment opportunities for farm workers. The 2008 report by the Australian Government highlighted the severe reduction in employment within the agriculture, forestry, and fishing industries due to ongoing drought, predicting a gradual recovery but also an unprecedented skills and labour shortage.
- Social decisions to reduce spending on discretionary items, to avoid social interactions and volunteer activities The framework of Social Impact Assessment (SIA) identifies key areas affected by drought, including people's way of life, culture, community cohesion, political systems, environmental quality, health and wellbeing, personal and property rights, and fears and aspirations.
- Environmental sustainability decisions such as destocking to preserve groundcover, are brought forward as growth low for the time of the year. Maintaining fodder and water supply becomes a daily chore and thoughts turn to improving water access options.

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The Recovering Phase is characterised by a sense of disbelief and uncertainty. Questions are raised as to whether the drought is over or there will be follow up rain to fill the soil profile and top up dams and rivers. Production is occurring but would be considered ‘below average’. Full production recovery will not have occurred if this area has experienced drought conditions over the past six months. This recovery phase may take years given the need to scale up to full production and rebuild reserves such as stock on hand and financial reserves.

Understanding Drought Resilience in Far Northwest NSW

Drought cannot be prevented nor avoided in our Australian environment, only managed.

Effective Drought Resilience ensures maximising production, creating strong and cohesive communities and ensuring reliant and robust service delivery networks in good seasons, so there is a level of established preparedness when drought occurs.

Waiting to take action and implement strategies of resilience in the midst of a drought is not effective and reflects ineffective crisis management. Putting strategies in place to reduce the depth and severity of the trough will ensure greater sustainability in the long term.

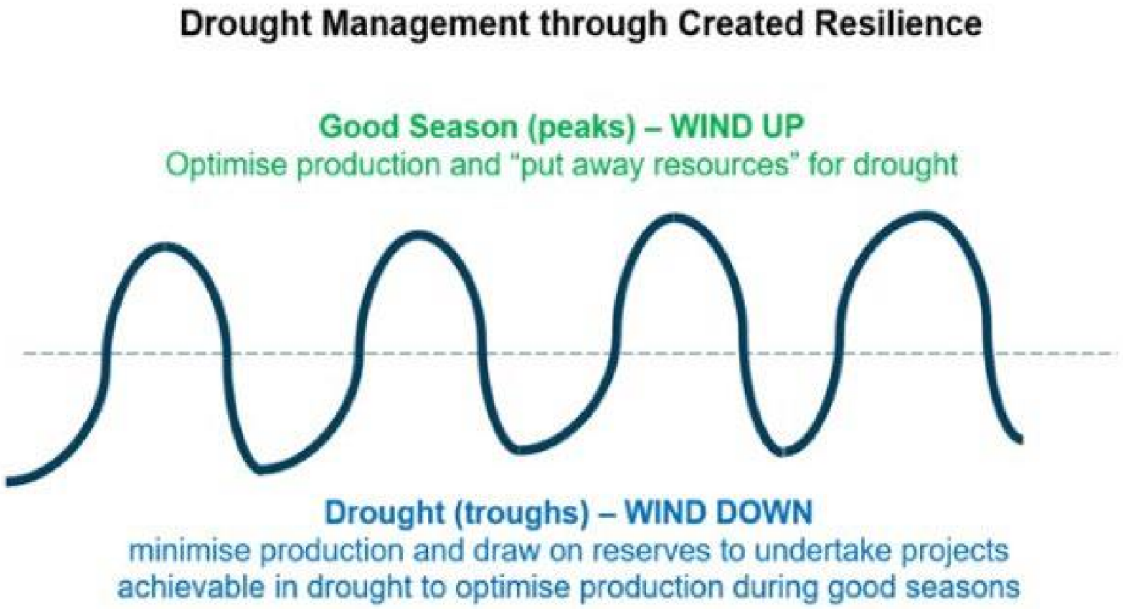

Figure 19 - Drought management through created resilience

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Drought Impacts on Regional Communities

The agricultural industry, vital to the Far Northwest, has been deeply affected by drought, with employment levels and the nature of work undergoing significant changes. Over recent decades, a trend towards larger, more mechanised farms has reduced the demand for local labour, exacerbating unemployment in small towns and communities. The 2008 report by the Australian Government highlighted the severe reduction in employment within the agriculture, forestry, and fishing industries due to ongoing drought, predicting a gradual recovery but also an unprecedented skill and labour shortage.

The socioeconomic ripple effects of drought extend far beyond the agricultural sector. In Bourke, for example, the contraction of agricultural production led to a substantial loss of seasonal employment, impacting the broader economy. Businesses reported reduced customer spending and a decline in visitors, contributing to a downturn in local economic activity. These flow-on effects emphasise the interconnectedness of agriculture with the wider regional economy and the critical role of employment in maintaining community cohesion and resilience. Consultation undertaken with Cobar Shire Council, community members and businesses, for example, highlighted the way in which small businesses felt the impact of drought more acutely and rapidly than the agricultural sector as businesses were forced to close, further exacerbating unemployment rates and the cycle of poverty.

Whilst all four shires have expressed a critical need to maintain water security, Brewarrina's past experiences during drought have intensified council and community concerns about reduced water storage capacity due to planned weir modifications in the shire during the 2018-2019 drought.

The narrative from Brewarrina and Walgett added another layer to the understanding of drought impacts, emphasising the psychological toll of recent drought periods which notably lacked the preventative pastoral care, early intervention for mental health and social support services compared to previous droughts.

Drought Impacts on the Far Northwest Region

During the most recent drought in 2018, the NSW Business Chamber conducted a comprehensive report to assess the impact of drought on businesses across the state, with a focused analysis on the Far Northwest and Orana regions. The findings revealed a stark reality: a staggering 98.3% of the 185 businesses consulted in these areas reported being affected by the drought, either directly or indirectly, a figure significantly higher than the NSW average of 83.7%. The impact varied, with 27% of the businesses, predominantly primary producers, unable to sustain production. Suppliers to these producers accounted for 34.5% of the affected, while a substantial 72.5% experienced the ripple effects due to a weakened local economy resultant from the drought conditions. Among these, 36.3% identified as moderately exposed, whereas a considerable 53.8% felt highly exposed to the drought's impacts.

The economic toll was severe, with 96.5% of businesses witnessing a decrease in sales and revenue, marking an average revenue decline of 36%, the most significant drop observed across any NSW region. The sectors of agriculture, forestry, and fishing bore the brunt of this adversity, recording a 46% reduction in revenue and sales state-wide. Specifically, in the Far Northwest and Orana region, the financial strain manifested as 31.8% of businesses struggled to pay invoices on time, necessitating extended payment

periods, and 10.6% found themselves unable to repay suppliers. This data underscored the extensive economic fallout from drought conditions, highlighting the urgent need for targeted support and interventions.

The resulting economic contraction was further exacerbated by volunteer fatigue, as the dwindling number of residents available to support community functions and emergency responses grew increasingly stretched.

The questioning of why droughts were not considered "natural disasters" reflected a broader call for policy recognition and support, highlighting the need for a more robust framework to address the complexities of drought management and assistance.

A concerning 18.7% of businesses admitted to feeling ill-equipped to mitigate risks associated with drought, highlighting a vulnerability to such climatic adversities. The long term sustainability of businesses was a significant concern, with 59.6% worried about the enduring impacts of the drought on their operations. In response to these challenging conditions, a whopping 85.5% of businesses were compelled to scale back on capital spending, deviating from earlier plans.

This data paints a vivid picture of the economic devastation wrought by the drought on the Far Northwest and Orana businesses, underlining the critical need for strategies aimed at resilience and recovery in the face of environmental challenges.

The Drought Impact Survey 2020, completed by the Royal Far West, reflected on the experiences of 36 rural families in NSW, starkly illustrates the multifaceted toll of prolonged drought. It reports a nearly 50% rise in the number of individuals struggling with housing costs and a significant 40% of adults indicating poor or fair health, a figure that has doubled, exacerbating the financial and mental health strain on rural families. Lindsay Cane, CEO of Royal Far West, emphasised the compounded adverse effects of drought on the well-being of rural families, which are further intensified by concurrent crises such as bushfires and the COVID-19 pandemic.

The survey quantitatively highlights the escalation in financial stress, with more than a third of families facing challenges in affording food, over half unable to meet health costs, and a notable deterioration in the ability to pay for health services and dental care. Transportation affordability has also suffered, affecting half of the respondents. This financial hardship contributes to job losses, elevated living costs, strained relationships, and heightened mental health needs among families and communities. The expressed need for enhanced access to health services, including mental health counselling, underscores the critical necessity for targeted support and services in rural areas.

Future Drought Projections and Impacts

Overview

The future impacts of drought in the Far Northwest Region of New South Wales are closely tied to the compound effects of various shocks and ‘megatrends’ that not only exacerbate the challenges posed by drought, but also present opportunities for action and improved resilience.

Climate Projections and Impacts

Factors such as climate change, with a predicted increase in temperature and variability in rainfall, have significant implications for the region.

Temperature Projections

The region is witnessing a marked rise in both minimum and maximum temperatures. Projections indicate an average increase of approximately 0.7°C by 2030 and 2.1°C by 2070 compared to baseline conditions. This warming trend is expected to result in an increase in the number of hot days annually, with significant implications for human health, water resources, agricultural productivity, and natural ecosystems.

This table outlines temperature projections for future periods:

Period	Increase
Near Future (2020 – 2039)	+0.3°C + 1.0°C
Far Future (2060 – 2079)	+1.8°C to + 2.7°C

Figure 20 - Temperature Projections (Source: CSIRO, 2024)

A map representation of the mean surface temperature projections for the Far Northwest Region Local Government areas of Bourke, Brewarrina, Cobar and Walgett – 2030 to 2090 follows.

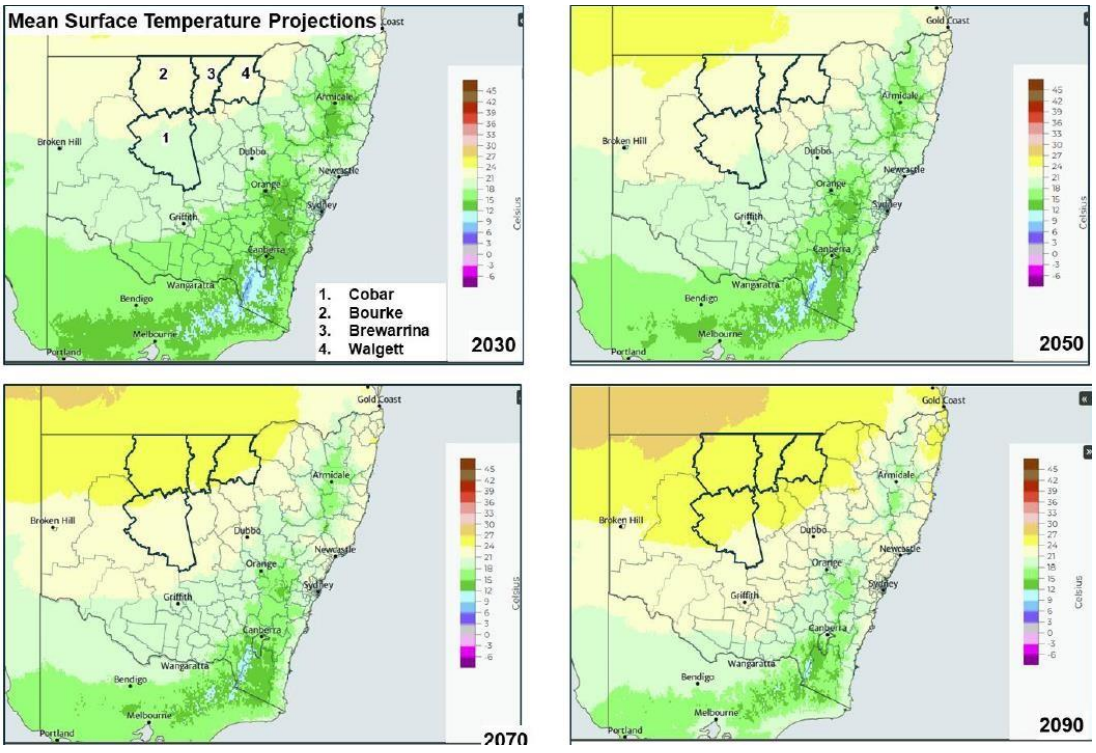

Figure 21- Mean Surface Temperature Projections (Source: CSIRO, 2024)

Rainfall Projections

Changes in rainfall patterns are anticipated, with a decrease in rainfall during spring and an increase in autumn. This shift could affect water availability, agricultural cycles, and the natural habitats of many species. The variability in rainfall, coupled with increasing temperatures, is likely to exacerbate drought conditions and challenge water management strategies in the region.

This table presents the projections for rainfall and evaporation:

Factor	Projection
Rainfall Decrease	Rainfall is expected to decrease, in dry seasons, by 30%, and increase, in wet seasons, by 17% by 2030. Rainfall is expected to decrease, in dry seasons, by 12%, and increase, in wet seasons, by 27%, by 2070.
Seasonal Shifts	Decrease in Spring rainfall, increase in Summer and Autumn rainfall.

Figure 22 - Projects for rainfall and evaporation (Source: CSIRO, 2024)

A map representation of the climate science rainfall projections for the Far Northwest Local Government areas of Bourke, Brewarrina, Cobar and Walgett – 2030 to 2090 follows.[12]

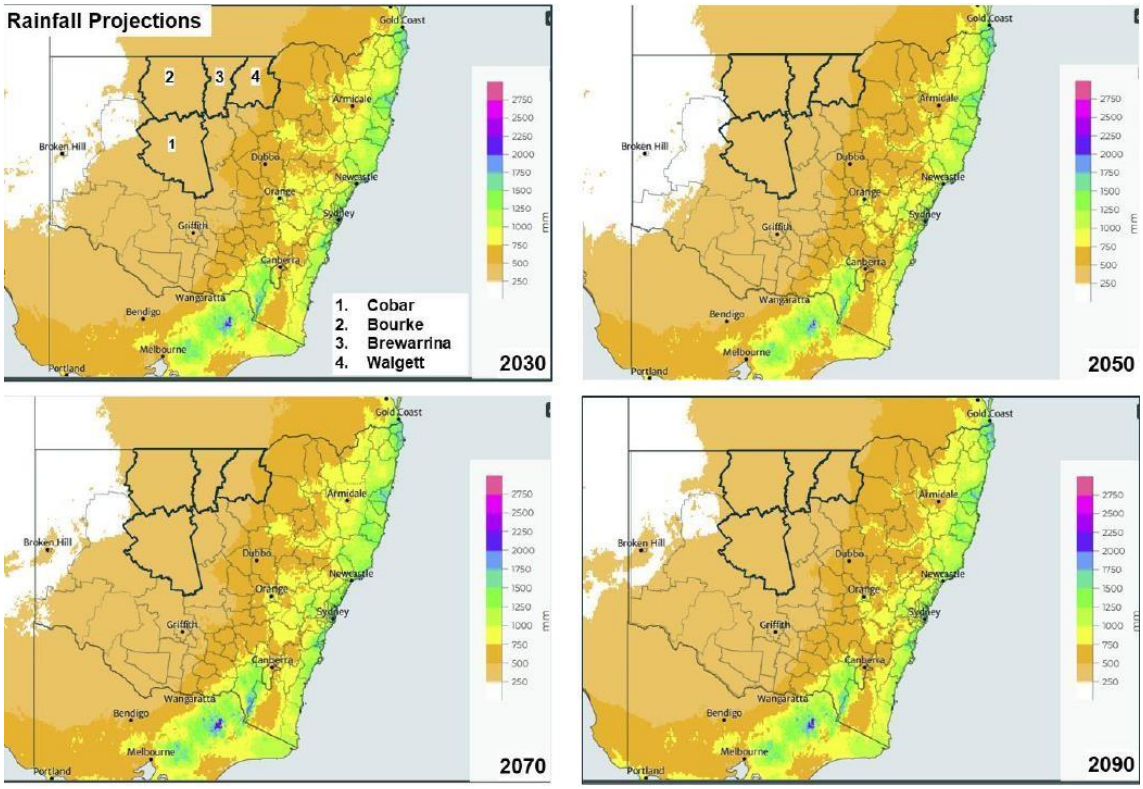

Figure 23 - Rainfall Projections (Source: CSIRO, 2024)

[12] https://www.climatechangeinaustralia.gov.au/en/projections-tools/

The reduction in average rainfall will have significant impact for many farmers and landholders, particularly in crop varieties reliant on irrigated agricultural land. The data below represents the irrigation requirements per crop type (ABS, 2022)[13].

Crop	ML	Ha	ML / Ha
Rice	538,365	45,084	11.94
Cotton	1,326,321	197,401	6.72
Fruit and Nut (excluding grapes)	1,127,108	196,906	5.72
Sugar Cane	795,440	157,521	5.05
Grapevines	516,550	130,534	3.96
Vegetables	382,626	98,785	3.87
Pastures and Cereal for Hay and Silage	664,712	210,391	3.16

Figure 24 - Irrigation requirements by Crop Variety (Source ABS, 2022)

Significant quantities of irrigated cotton are grown in Walgett, and also to a great extent in Brewarrina and Bourke LGAs, with groundwater an important water source for this irrigation. Broadacre crops, specifically cotton lint, were valued at $55.65 M, $19.58 M and $18.91 M in Walgett, Brewarrina and Bourke, respectively. Irrigated cotton covers a land area of 7,250 ha in Walgett, ranked 5 for land coverage in NSW.

Livestock slaughtered for meat also contributes significantly to the economy across Walgett, Bourke, Brewarrina and Cobar LGAs. Within Walgett livestock slaughtered (meat) is valued at $49.3 M. In Bourke it is the primary agricultural activity by value at $38.98 M, responsible for the primary source of income for many farmers and landowners within the LGA. For livestock farming it is essential sheep and cattle have an adequate supply of good quality water, with up to 12L consumed per head per day for sheep and up to 140L for cattle. During drought, water requirements increase to maintain the movement of coarse, less digestible feed in the gut.[14]

Wool production is also an important contributor to the economy in the region, valued at 38.51 M across all four LGAs. However, wool production and scouring is very water

[13] 13 Water Use on Australian Farms,

ABS, 2022.

[14] Water Requirements for Sheep and Cattle, Department of Primary Industries, 2014.

intensive, consuming approximately 2.3 – 2.5 tonnes of water per tonne of wool fibre produced. [15]

As a result, a future scenario involving a reduction in the average annual rainfall will have significant impacts on the value of agricultural production in the region, with the likelihood of cotton gin and wool scourer closure increasing due to a lack of water resources to maintain production and operation.

Bushfire Risks and Erosion Concerns

The Far Northwest is expected to see an increase in bushfire risks due to higher temperatures and changing rainfall patterns. Additionally, the region may experience heightened erosion rates, affecting soil health, water quality, and agricultural productivity. These environmental changes call for robust adaptation and mitigation strategies to protect communities, ecosystems, and the economy.

Climate Aspect	Near Future (2020 – 2039)	Far Future (2060 – 2079)
Average Temperature Increase	Approx 0.7°C.	Approx 2.1°C.
Maximum Temperature Increase	0.3 - 1°C	1.8 – 2.7°C
Minimum Temperature Increase	0.4 – 0.8°C	1.4 – 2.7°C
Additional Hot Days Annually	10 – 20	30 – 40
Fewer Cold Nights Annually	5 – 10	10 – 20
Rainfall Change	Decrease in Spring, increase in Summer and Autumn.	
Fire Weather	Increase in the near future and far future, with most profound increases in average and severe fire weather in Spring.	

Figure 25 - Climate change snapshot for near future (2020 - 2039) and far future (2060 - 2079). (Source: CSIRO, 2024)

[15] Li et al, Water footprint assessment of wool products with a low-water footprint baseline, Institution of Chemical Engineers, 2022

Hot Days and Drought Frequency Projections

The table below shows the projections for the frequency of hot days and drought conditions:

Condition	Projection
Hot Days Increase	More hot days and consecutive days above 38°C.
Drought Severity	2 – 3% probability of severe droughts (similar conditions to 2017 – 2020).

Figure 26- Frequency of hot days and drought conditions

The NSW Government's advanced climate data has unveiled the natural climatic variability extending beyond the observed records. This data suggests that the region has historically experienced more severe wet and dry periods than recorded in the last 130 years.

Given the combination of changes in temperature and rainfall the evapotranspiration[16] projections follow.[17]

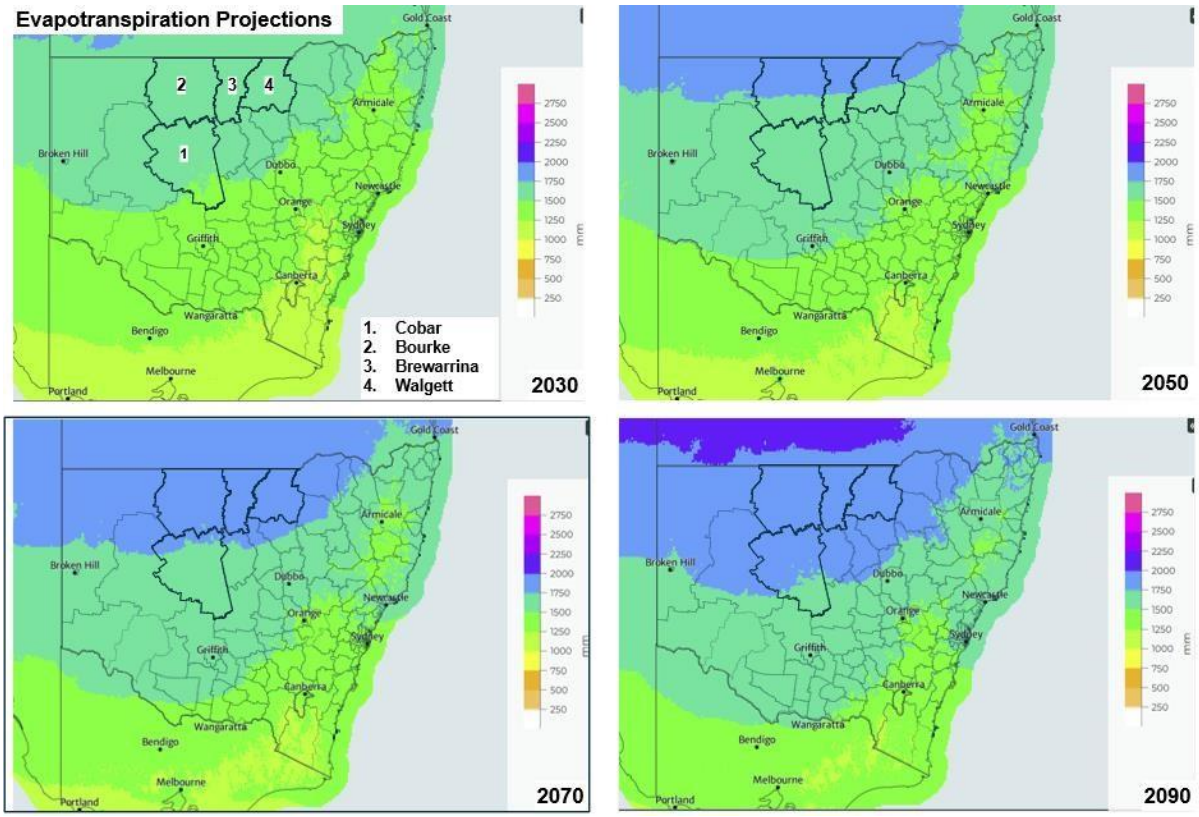

Figure 27- Evapotranspiration Projections (Source: CSIRO, 2024)

[16] Evapotranspiration is defined as: 'The combined effect of evaporation and transpiration.' Evaporation is defined as: the process by which water or another liquid becomes a gas. Water from land areas, bodies of water and all other moist surfaces is absorbed into the atmosphere as a vapour, and Transpiration is defined as 'the process where plants absorb water through their roots and then evaporate water.'

[17] https://www.climatechangeinaustralia.gov.au/en/projections-tools/

Prolonged drought conditions result in increased pressure on water resources, adversely affecting agricultural productivity and leading to a cyclical pattern of economic hardship and population decline.

Population Impacts

The population rate in the Far Northwest region has decreased consistently from 2006 to 2021, with the most substantial declines occurring during drought periods (see Graph 1). In the Bourke, Brewarrina, Cobar and Walgett Shires, the current population trends are characterised by a declining and aging demographic, particularly in agricultural sectors.

Drought exacerbates these trends, leading to increased migration to urban centres as younger residents seek more stable living conditions and employment opportunities elsewhere. This out-migration contributes to an aging population, workforce reductions, and challenges in maintaining economic stability and community services.

Future droughts are likely to intensify these population impacts and create further economic challenges. The aging population may lead to a further decline in the size and capability of the workforce, especially in agriculture, which is heavily dependent on physical labour. Continued drought could accelerate population decline as residents, especially the younger demographic, seek more stable living conditions and employment opportunities elsewhere. This out-migration will have long-term implications for the region's demographic structure, reinforcing the trend to an aging population and a shrinking labour force, further constraining economic growth and community vitality. This trend suggests that droughts are a critical factor driving population decline, likely due to the associated economic and environmental hardships. The ongoing challenge for these regions is to develop strategies that enhance liveability, drought resilience and economic diversity to mitigate the impact of future droughts on population trends.

Outmigration also undermines the confidence needed to invest in and revitalise shrinking communities. This lack of confidence stifles local entrepreneurship and discourages new businesses from setting up, further accelerating economic decline. Decisions to invest in the community often become driven by emotional ties rather than sound economic rationale, as residents strive to improve their 'home' and attract like-minded people, despite the ongoing challenges.

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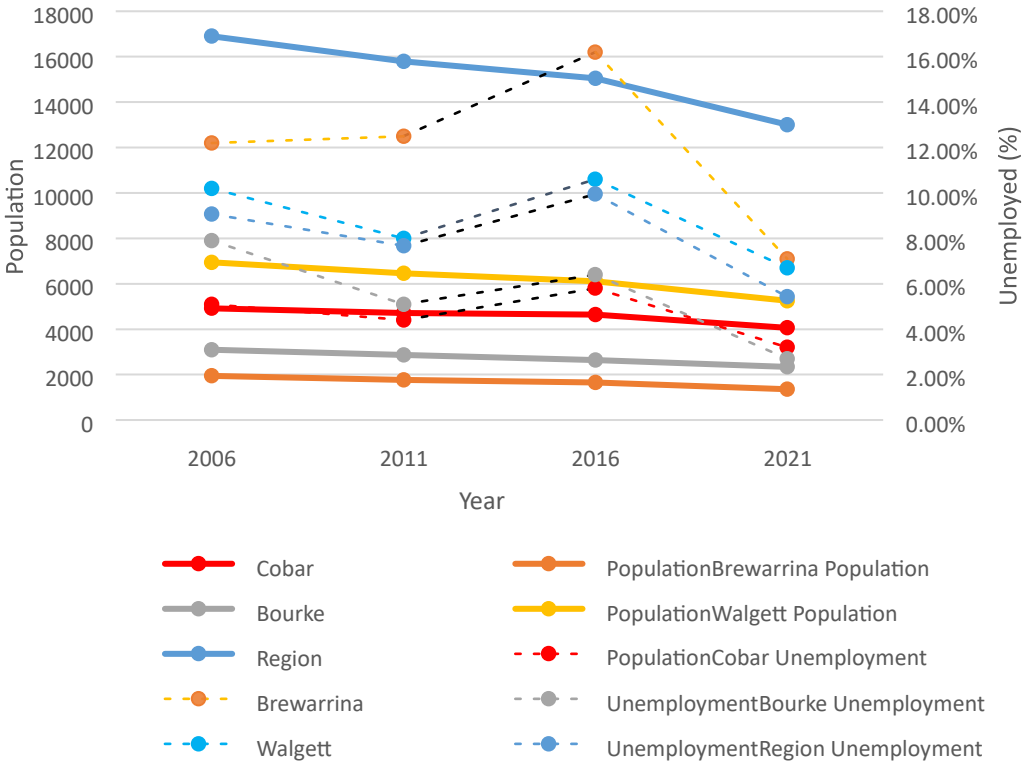

Figure 28– Population and unemployment trends in the region between 2006 - 2021 (ABS).

Economic Impacts

Economic impacts of future droughts on employment are complex and influenced by several factors including government policy and funding, structural changes in agriculture, economic diversification and resource management and sustainability.

- **Economic impacts - Government Policy and funding**

The economic resilience of the region during drought periods has historically depended on emergency relief efforts, government subsidies, and temporary employment packages.

While these measures can provide short-term relief, they are not sustainable options for long-term drought resilience and may not sustain long-term employment stability, with this impact likely exacerbated in future droughts, particularly because of tightened lending due to reduced national economic activity.

> *"While the work done by drought support workers was great, this support finished once the drought was over". – Belinda (Cobar)*

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Farmers can now access low interest loans to help prepare for, manage and recover from drought the:

i. Regional Investment Corporation (RIC) Farm Investment Loan and RIC Drought Loan, make the farm business stronger, more resilient and more profitable. ii. Drought Ready and Resilient Fund, a loan facility of up to $250 000 can be used for products, activities and services relating to animal welfare, farm preparedness, income diversification, environmental improvements as well as training and business development.

iii. Drought Infrastructure Fund (previously known as the Farm Innovation Fund) the loan product can be used for drought preparedness and mitigation by investing in permanent on-farm infrastructure that will:

- manage adverse seasonal conditions - improve water efficiencies with irrigation systems, cap and piping of bores, new dams, install water tanks and desilting of ground tanks
- ensure long term sustainability - increase the viability of a farm business and improve pasture and soil health, plant trees for shade and wildlife corridors, eradicate weeds, flood proof property and fence riverbanks. ○ improve farm productivity - reduce risks and improve efficiencies by building fodder and grain storage facilities, sheds, fencing, roadworks and solar power conversions.

These initiatives were designed to bolster the resilience of NSW farmers to future adverse weather events and climatic conditions, such as drought. The absence of low interest loans like these during subsequent droughts would limit a farmers' ability to adapt to drought conditions, to invest in necessary improvements or maintain operations. This could potentially lead to business closures and a significant reduction in the agricultural workforce.

The downside of low interest loans is that repayment of the loan is contingent on return to more profitable outcomes which may be delayed in an extended drought. Low interest loans in addition to any pre-existing loans will put added pressure on the farming business especially in times of rising interest rates and inflation.

A further drought would likely exacerbate economic vulnerabilities, leading to more significant reliance on external financial support and emergency relief measures. This dependency could strain regional and national resources, especially if drought conditions become more prolonged and severe due to climate change.

- **Economic impacts - structural changes in agriculture**

Evident in the Far Northwest Region, employment in the agricultural sector shows a more consistent decline over the entire period, with the most significant drops occurring between drought periods. This trend suggests that the sector's downturn is not solely due to drought conditions but also to broader structural changes within the industry, such as increased automation, shifts towards less labour-intensive farming practices, and farm consolidation.

These changes are often aimed at increasing efficiency and reducing reliance on variable human labour, but they also lead to a reduced agricultural workforce over time.

This is a common trend in drought scenarios globally, where prolonged drought conditions catalyse farm consolidation and the adoption of farming practices that are less dependent on human labour, thus leading to a persistent decline in agricultural employment outside of active drought periods.

- **Economic impacts – diversification**

Employment in the administration and public services sector often increases during drought periods due to heightened demand for public assistance and the implementation of drought relief programs. These programs, typically funded by government initiatives, aim to mitigate the immediate effects of drought on communities, leading to temporary job creation in local government and support services.

This rise in administration and public services roles may occur but is more likely seen in regional centres such as Dubbo. Many drought relief programs are delivered out of Dubbo or other regional centres and access to the service is online or by travelling to Dubbo or by drive-in drive-out service. Remote delivery of services to the Far Northwest Region adds little to the community and puts extra pressure on the strained resources of the Far Northwest Region, especially when travel to a regional centre to access a service is required.

Once these drought-specific programs conclude, the employment in this sector declines substantially, reflecting the temporary nature of such interventions. The observed decline in employment between drought periods in administration and public services can be attributed to the cessation of temporary drought relief programs and a return to pre-drought governmental operations.

This cycle indicates a reactive rather than proactive approach to drought management, where employment opportunities are directly tied to immediate drought response efforts rather than long-term resilience planning.

This pattern may not be sustainable in future droughts. While temporary employment opportunities might arise from relief efforts, these jobs are not a replacement for the lost permanent positions in agriculture and related industries. Over time, repeated droughts could lead to a permanent shift in the job market, with an increased number of short-term, low-security jobs, further destabilising the region's economy.

A trend which started in the 2017-2020 drought and gained momentum during the Covid-19 Pandemic was the rise in prominence of remote working and small business. Digital connectivity has enabled the people of Far Northwest Region to connect to with education, business and customers like never before.

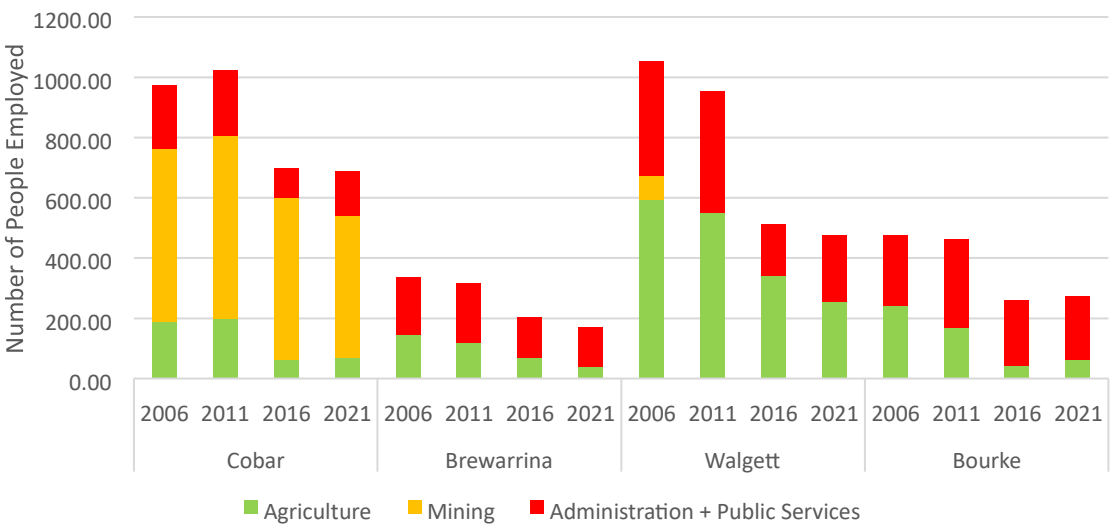

Figure 29– Industry trends from 2006 - 2021 (ABS - Top 5 Industries).

An off-farm income is an extremely valued defence for farming families against the boomand-bust cycle of drought and recovery. For example, the incredibly successful “Buy from the Bush” social media campaign promoted regional businesses was launched from a kitchen table on a property near Warren. It leveraged the enormous opportunity to connect city customers who really cared about the bush with over 250 bush retailers. It is estimated Buy from the Bush provided $14 million in revenue to regional businesses during its operation.

> *Buy from the Bush founder Grace Brennan: “Often you get a very one- dimensional perspective, with rural issues only trending in times of crisis,” she said.*
>
> *“But we want to be able to provide a nuance beyond farmers in paddocks when times get tough ... we have this incredible untapped resource in the way rural Australia works to solve problems. For me, it’s like a secret sauce. We need to mine in and leverage it.”*
>
> *Sydney morning Herald 10/09/2023*

Regions with economies heavily dependent on agriculture will face increased vulnerability from drought, requiring improvements in digital connectivity to facilitate training opportunities for business diversification and sustainable farming practices. Also, the future success of small businesses in the Far Northwest Region is contingent on access to a larger market.

Expansion of digital connectivity is vital for economic and social participation, particularly for smaller centres where “off-farm” income is a significant strategy in drought preparedness and drought resilience.

- **Economic Impacts - resource management**

Efficient management of resources including human resources, reserves of fodder and water are directly linked to productivity and profitability. When a business is thriving, more money can be spent on resource management and confidence is high.

Conversely, droughts result in reduced capacity to earn an income and result in a rundown of reserves or resources. Not only reserves of pasture, fodder and water are depleted: human reserves of energy and confidence are also depleted giving rise to physical and mental health issues. As the Far Northwest Region relies on the goodwill of volunteers to run events such as school carnivals, sporting fixtures and agricultural shows, social activities are curtailed further compounding the issue. Suicide or mental illness deeply affects the community whose lives are deeply entwined through business or social activities.

Unemployment and loss of income not only affects those directly involved in agriculture, but also ripples through the local economy, impacting sectors like retail, services, and manufacturing that rely on the spending power of these primary sector employees. The impacts on local business was exemplified in the most recent 2017 – 2019 / 2020 drought, where the inability for non-primary producers to access subsidies resulted in significant business closures, many of which have not reopened since.

- **Economic impacts - employment**

The economic impacts of future droughts on employment in regions like Bourke, Brewarrina, Cobar, and Walgett. can be significant, affecting various sectors differently based on their reliance on natural resources and government interventions. The fluctuating employment trends in these regions, particularly in the administration, public services, and agriculture sectors, reflect the broader economic vulnerabilities and structural adjustments that occur in response to drought conditions.

During drought, the changes in agricultural employment are minimal, possibly due to the necessity to maintain operations despite reduced water availability and productivity. Government subsidies and support during these periods can help sustain agricultural employment temporarily, but they do not address the underlying trend of workforce reduction in the sector.

Following the 2017-2020 drought farmers have demonstrated a propensity to de- stock based on BoM dry seasonal forecasts, thereby reducing the workload to feed stock and reducing constraints on their time possibly freeing up time to pursue an off-farm income.

Addressing these challenges will require integrated-long term strategies that enhance regional resilience to drought while supporting sustainable employment and economic growth.

The economic impacts of future droughts on employment in Bourke, Brewarrina, Cobar, and Walgett regions, will likely continue to reflect the complex interplay between temporary government interventions, structural changes in agriculture, and the need for greater economic diversification and sustainable resource management.

Social Impacts

The Drought Impact Survey 2020[18] conducted by Royal Far West on rural families in NSW paints (responses recorded by 36 rural families staying at Royal Far West in February and March of 2020) a distressing picture of the broad-reaching consequences of prolonged drought, which has severe implications for predicting the social impacts of future droughts.

The survey's findings on financial stress, where over a third of families struggled to afford food, and more than half faced difficulties meeting health costs, suggest a significant decline in living standards and access to basic needs. The deterioration in the ability to afford essential services like health and dental care, coupled with transportation challenges affecting half of the respondents, reflects the extensive economic strain and social isolation experienced by these communities.

Studies have shown that droughts exert long-term psychological and social effects, leading to increased rates of depression, anxiety, and other mental health disorders in affected populations. The loss of livelihoods, uncertainty about the future, and the degradation of the natural environment can lead to a sense of hopelessness and helplessness among community members.

Predicting the social impacts of future droughts based on these findings suggests a continuing and possibly worsening trend of financial hardship, health issues, and social disintegration in rural areas. The compounded stress of successive droughts and other overlapping crises can erode community resilience, weaken social bonds, and lead to a breakdown in social cohesion.

The expressed need for better access to health services, including mental health counselling, highlights the urgent requirement for comprehensive support systems that address the multifaceted challenges posed by drought.

[18] West, R. F. (2020). Cumulative effects of drought show sustained hardship – survey.

Impacts on Indigenous Communities

The future drought impacts on Indigenous communities in the Bourke, Brewarrina, Cobar, and Walgett regions, as evidenced during the 2018-2020 drought, are profound and multifaceted. These impacts go beyond the immediate environmental and economic effects, touching the very core of cultural identity and community well-being.

- **Environmental impacts**

The decline in native flora and fauna during drought, alongside the loss of breeding grounds for birds and fish, signifies a broader ecological crisis affecting the entire ecosystem's health and sustainability.

The ongoing struggle for water rights and the impact of large-scale agricultural and mining operations, underscore the challenges of managing water resources in a way that respects both the environmental needs and the rights of Indigenous communities. The upstream water extraction for irrigation highlights a critical need for equitable water management policies that consider the cultural, ecological, and economic needs of all communities along these river systems.

- **Economic impacts**

The drought's economic impact on these communities, particularly those engaged in traditional land and water-based activities, is severe. With rivers drying up, activities like fishing, swimming, and hunting, which are not only cultural practices but also vital sources of sustenance and income, are no longer feasible.

Drought also reduces casual and seasonal employment opportunities such as harvest or planting operations.

- **Cultural impacts**

Water sources in these regions are not merely physical resources but hold cultural significance for Indigenous communities. They are places of cultural practices, storytelling, and spiritual solace. The drought's severity, leading to dry rivers and disappearing wetlands, disrupts these cultural practices, severing the connections that these communities have with their land and water.

The distress expressed by community members of the Gamilaraay and Yuwaalaraay elders and residents like Rhonda Ashby and Brenda McBride speaks to a profound sense of loss, not only of water but of culture, heritage, economic stability, and environmental health. The ongoing challenges faced by these communities call for urgent and inclusive water management strategies that recognise and integrate the cultural, spiritual, and ecological significance of water to Indigenous Australians.

- **Community impacts**

Their communities, which are deeply connected to the land and water for cultural practices, livelihood, and identity, will face increasing challenges as droughts become more frequent and severe.

Access to water is a critical concern, with drought conditions reducing river flows and water levels, thereby affecting not only daily life but also the health of sacred and culturally significant sites such as the Barwon River which hosts the Baiame's Ngunnhu. This situation threatens to disrupt traditional activities and cultural heritage.

Environmental Impacts

The diverse impacts of drought on ecosystems, as noted by Bond et al. (2008), underscore the multifaceted nature of drought effects on environmental and ecological systems.

The Murray Darling Basin has experienced significant ecological stress due to drought conditions, with notable events such as toxicity in the lakes at the end of the Murray River and large-scale mortality of floodplain forests. These incidents, driven by low river inflows and the absence of flooding, highlight the critical link between water flow and ecosystem health.

For Far Northwest NSW, the insights gained from studies and modelling of changing conditions within the Murray Darling Basin can be used to predict the impact of future droughts. Prolonged and future droughts will likely have significant impacts on aquatic ecosystems, which are particularly vulnerable to reduced river flows and lower water levels in natural bodies. As a result, fish populations and other aquatic life forms may face decline due to the reduced availability of habitat and water quality issues.

Similarly, terrestrial ecosystems will suffer from decreased moisture availability, causing vegetation stress, higher mortality rates in plant species, and adverse effects on wildlife dependent on these habitats.

Soil erosion and land degradation are additional concerns during drought periods. The absence of vegetation cover can lead to increased erosion by wind and water, leading to the loss of fertile land, which is detrimental to agricultural productivity and natural ecosystems. Drought conditions also exacerbate climate change feedback loops. For example, stressed vegetation due to drought captures less carbon, and soil erosion can release the carbon stored in the soil, thus contributing to increased greenhouse gas emissions.

These interconnected impacts of drought highlight the need for comprehensive strategies to mitigate environmental degradation and promote sustainability in Far Northwest NSW.

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Unpredictable Future Scenarios that may Affect Future Drought Response

The Economic, Environmental and Social scenarios that may arise and affect responses to future Droughts are summarised as follows.

Future Scenario	Factors Contributing	Effects	References
Economic			
Economic Decline	Reduction in tourism due to weather. Decrease in agricultural productivity. High unemployment rates.	• Loss of income for local businesses, reduced investment in the region. • Lower tax revenues for local government, reduced funding for public services. • Increased social welfare costs, potential rise in poverty and crime, decreasing community stability needed for coordinated drought response.	Far West Regional Economic Development Strategy 2023 Update
Infrastructure Damage	Severe weather events (e.g. floods, fires). Aging infrastructure. Limited funding for infrastructure projects.	• High costs of repair and maintenance, disruption of economic activities. • Decreased accessibility to essential services and markets, hindering the distribution of drought relief resources. • Increased vulnerability to future climate events, reducing overall resilience against droughts.	Far West Regional Plan 2036 Brewarrina Strategic Planning Statement
Policy Shift	Change in government or policy direction. New environment regulations.	• Potential funding reduction or change in prioritisation for drought response programs, leading to inadequate	Bourke Shire Strategy 2012

Future Scenario	Factors Contributing	Effects	References
	Altered economic policies. Shifts in social policies.	• preparation and mitigation efforts. Increased costs for environmental compliance, reducing available funds for drought resilience projects. • Uncertainty for businesses and investors, hindering long-term planning for drought resilience. • Impact on delivery and governance of community support programs, affecting social cohesion and collective action during droughts.	
Water Shortages	Prolonged droughts. Over-extraction of water resources. Inefficient irrigation systems.	• Reduced agricultural output, loss of income for farmers, higher food prices. • Competition for water resources among different sectors, complicating water allocation during droughts. • Need for investment in watersaving technologies and practices, challenging the financial stability needed for effective drought response.	Water and Drought Security Report Brewarrina Strategic Planning Statement
Environmental			
Climate Change	Increasing temperatures. Changing rainfall patterns. Extreme weather events.	• More severe and frequent droughts, water scarcity, loss of biodiversity. • Greater demand for water management and adaptation strategies, increasing costs and complexity of drought response.	Far West Climate Change Snapshot Brewarrina Strategic Planning Statement
Increased Frequency of Floods	Climate change leading to unpredictable rainfall patterns. Inadequate flood management infrastructure.	• Destruction of homes and infrastructure, displacement of communities. • Increased recovery costs, longterm economic disruption, diverting resources from drought preparedness efforts.	Far West Regional Economic Development Strategy 2023 Update Brewarrina Strategic Planning Statement
Water Quality Degradation	Pollution from agricultural runoff, industrial activities. Inadequate waste management systems. Climate change impacts.	• Threat to public health, loss of aquatic life, increased water treatment costs. • Reduced availability of safe drinking water, negative impact on tourism, complicating community health during droughts. • Long-term degradation of natural water sources, reducing resilience of water supplies during droughts.	Barwon-Darling Valley Annual Surface Water Quality Report Brewarrina Strategic Planning Statement

Future Scenario	Factors Contributing	Effects	References
Social			
Aging Population	Declining birth rates. Outmigration of younger population.	• Higher dependency ratio, increased demand for healthcare services. • Strain on social services, reduced economic growth, fewer physically capable individuals to aid in drought efforts.	Far West Regional Economic Development Strategy 2023 Update
Digital Divide	Inadequate internet and telecommunication infrastructure. Removal of specific categories of network coverage e.g. 3G. High costs of technology adaptation. Shifting geographic distribution of population.	• Limited access to online education, healthcare and business opportunities. • Wider economic and social inequality, reduced competitiveness, limiting innovative drought mitigation strategies. • Increased difficulty in retaining and attracting skilled workers, affecting the region's ability to plan and implement drought responses.	Bourke Shire Strategy 2012
Health Crises	Increased temperatures and extreme weather. Limited access to healthcare services in remote areas. Expected increased frequency of viral outbreaks.	• Higher prevalence of heat related illnesses, leading to strain on healthcare services. • Increased mortality and morbidity rates, reduced quality of life, impacting community morale and ability to cope with droughts.	Far West Climate Change Snapshot Brewarrina Strategic Planning Statement
Housing Shortages	Population growth without corresponding infrastructure development. Increased number of temporary workers for construction jobs and REZ work. Natural disasters damaging existing housing.	• Increased homelessness and higher rental and property prices leading to outmigration. • Pressure on local governments to provide emergency housing, reducing focus and resources available for drought relief.	Far West Regional Economic Development Strategy 2023 Update
Outmigration	Lack of employment opportunities. Insufficient access to essential services. Poor educational facilities.	• Reduced workforce for agriculture and other industries. • Decreased community resilience. • Increased pressure on remaining residents to maintain community functions. • Reduced resources to assist with drought response. • Disruption to community cohesion and support structures.	Brewarrina Shire Economic Development and Tourism Plan

Figure 30 – Summary of potential Economic, Environmental and Social scenarios

The analysis of the future drought projections and impacts, demonstrates the interconnected nature of the natural, economic and social environments.

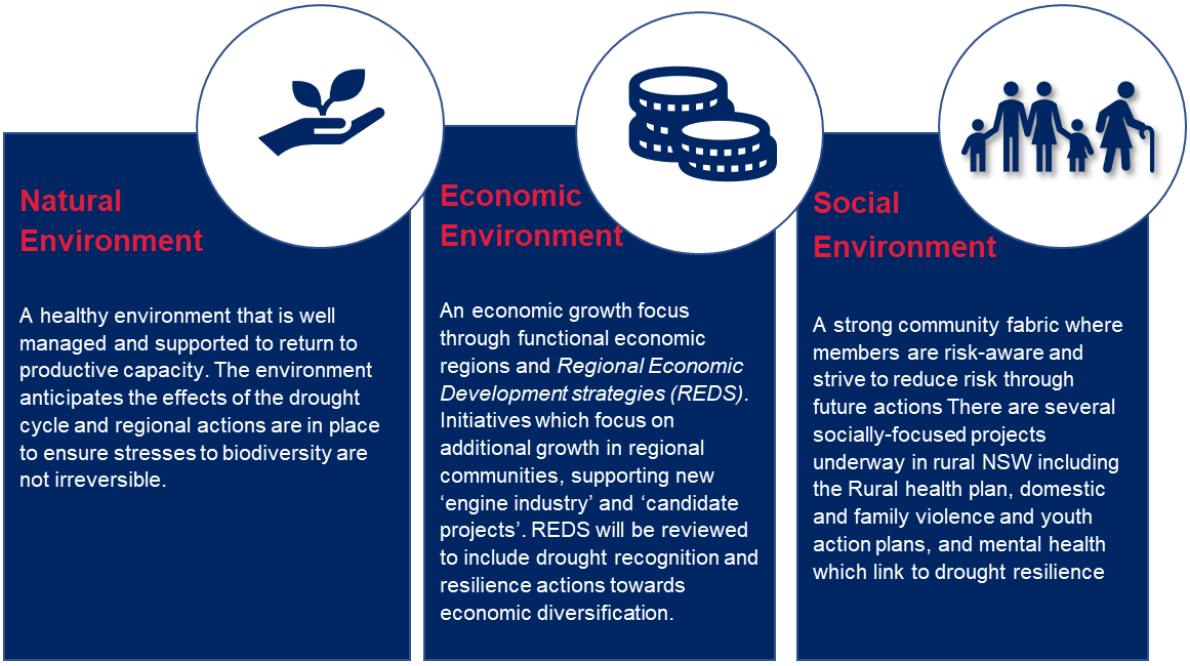

Figure 31 - Viewing Resilience as a System

The interconnected nature of those environments reinforces the requirement for the initiatives and projects that contribute to improving the drought resilience of the region to be considered as a system, and not in isolation.

Our Drought Resilience Journey

The plan:

- Recognises the proactivity of farmers and communities in regard to drought preparedness.
- Highlights that further preparedness is required to continue to address the currently identified and future impacts of drought, and the associated climate trends.

Councils, community members, industry leaders and technical stakeholders have identified strategic initiatives and projects with the corresponding actions for the Far Northwest Region which are required to improve the drought resilience of the region.

The projects and initiatives detailed were distilled from the 'long list of projects' arising from the initial stakeholder consultation processes.

The conduct of and outcomes from the stakeholder consultation following the development of the 'long list of projects' informed the construct of the projects defined under each initiative – the 'short list'.

The initiatives:

- Form a pathway towards improving the resilience of the region to the impact of drought and its related stresses and shocks.
- Contribute to maintaining, modifying and transforming existing systems and functions within the region.

It should also be considered that drought is dynamic in nature and that there is not specific point at which resilience of a Region is attained. Therefore, it should be expected that as a project or an initiative progresses, that further opportunities will arise that might be pursued and incorporated within the plan to further improve the drought resilience of the region.

This plan incorporates a series of projects under four initiatives:

- **Long-Term Water Security Projects**. The initiatives include Groundwater, offstream storage, and water reuse projects.
- **Telecommunication security**. The initiative is aimed at improving the telecommunications connectivity across the region.
- **Stronger Communities Program**. The initiative is aimed at improving the community cohesion, well-being and financial resilience in region.
- **Sustainable Recreation & Tourism Strategy**. The initiative is aimed at developing and implementing a tourism strategy across the region on a sustainable basis.

The project and initiatives in this Plan are aligned to the Key Outcome Areas to foster a more resilient, innovative and united region:

- People, Culture, and Community,
- Economy,
- Landscape and Natural Environment, and
- Infrastructure and Built Environment.

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Project / Initiative	People, Culture, and Community	Economy	Landscape and Natural Environment	Infrastructure and Built Environment
	Enhance regional liveability, foster a robust and attractive community, and improve social resilience and wellbeing.	Expanding the business and agricultural sector's self-reliance and performance, ensuring stability and growth within the region's economy.	Improving the environmental resilience of the entire regional landscape, including agricultural lands and river systems.	Strengthening infrastructure to support economic and environmental sustainability.
Long-Term Water Security Projects	✓	✓	✓	✓
Telecommunication security	✓	✓	✓	✓
Stronger Communities Program	✓	✓		
Sustainable Recreation & Tourism Strategy	✓	✓	✓	✓

Figure 32 – Alignment of Project / Initiatives by Outcome Area

As an outcome of future droughts, and implementation of drought resilience projects and the evaluation of the outcomes and impact over time, the plan across the four outcome areas will need to adapt, transform and change over time.

The plan for each initiative includes:

- A description of the initiative and project.
- Scope of the initiative and projects.
- Pathway to implementation.
- Analysis of how the initiative / projects supports 'Broader Drought Resilience.'
- Actions required under the three pillars of the Drought Resilience, Adaptation and Management model to implement them: ○ Pillar 1 – Planning and Monitoring.
    - Pillar 2 – Responding to Drought Events.
    - Pillar 3 – Building Future Resilience.
- A Timeline for implementation.
- An economic analysis of the initiative.
- A governance structure to support the implementation of each initiative.
- An analysis of the responsiveness to potential future scenarios and uncertainties on the implementation and delivery of each project.
- An evaluation approach to the implementation, outcomes and impact of each project.

The program logic described in the following diagrams:

- underpins the investment decisions for the initiatives, and
- reflects the linkage of the various components through the Plan responding to future uncertainty and change around:
    - Situation **(if)**.
    - Initiatives / Projects, Inputs and Planning, Outputs **(then)**.
    - Outcomes **(has the impact of)**. ○ Impact **(contributes to the vision of)**.

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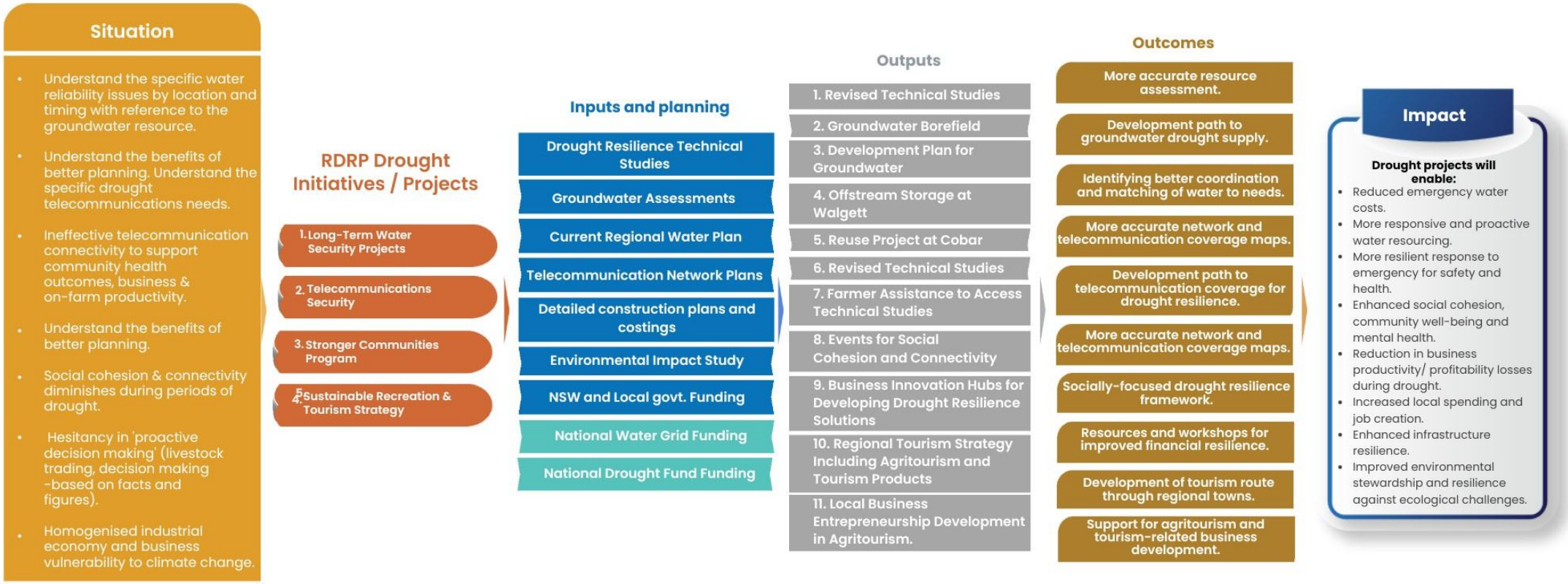

Figure 33 - Drought Resilience Program Logic Map at a Project Level (Bourke, Brewarrina, Cobar and Walgett LGAs) (The Stable Group, 2024)

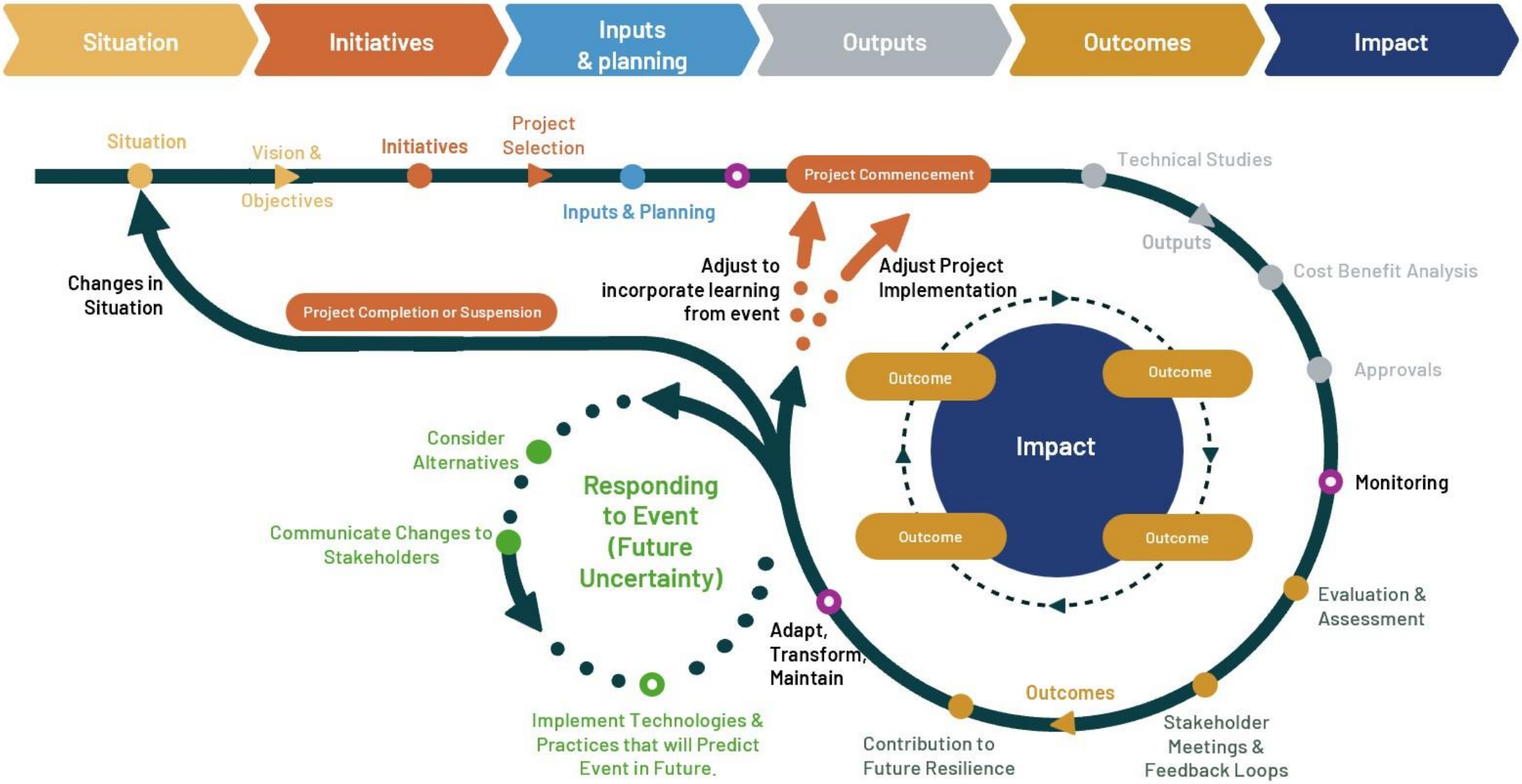

Figure 34 - Drought Resilience Program Responding to Future Uncertainty and Change (The Stable Group, 2024)

Long-Term Water Security Projects

Project Description

The shortlisted long-term projects to improve water security include the provision of:

- Improved ground water monitoring to enable treatment of groundwater to provide an improved level of secure water supply to the region.
- Off-stream storage at Walgett to address water reliability, given the releases from Keepit Dam for the town supply have had to cease in drought periods and to reduce the need for reverse osmosis treatment of groundwater sources.
- A water reuse capability in the Cobar Shire, to supplement the Regional Water Strategy Macquarie – Castlereagh – Implementation Plan.

Scope of water security projects

Water Security Groundwater – Proving of Groundwater Resources (Quality and Flow) and Installation of Standpipes

Improve groundwater quality monitoring through auditing the current bore network, implementing regular sampling programs and collating groundwater quality data from industry and government sources into one database.

Investment in technology and research to understand how treated groundwater can support towns, landholders and industries to secure a water supply.

Off-Stream Storage at Walgett

Establishing an off-stream storage capability at Walgett.

Water Reuse Project in Cobar Shire Council

Install a wastewater re-use treatment and supply distribution system within Cobar.

Pathway to implementation

The pathway to the delivery of the projects includes (as required):

1. Conduct of feasibility and technical / geotechnical investigation and studies to assess the viability, sustainability, and environmental impact of proposed water projects.
2. Survey and Detailed design.
3. Environmental assessments.
4. Detailed cost estimate.
5. Complete full business case.
6. Funding applications and regulatory approvals.
7. Tender for construction.

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Supporting Broader Resilience

The water security projects will contribute to improving drought resilience of the Far Northwest Region through:

- Modifying the existing system for the provision of water from ground water sources.
- Transforming the existing water supply capability to Walgett.
- Transforming the existing water source capability to Cobar.

The projects support the pillars of drought resilience as follows:

Pillar 1: Planning and Monitoring	Pillar 2: Responding to Drought Events	Pillar 3: Building Future Resilience
• Carry out feasibility studies to identify the most effective water security projects, such as new groundwater sources or reservoirs. •Implement monitoring systems for existing water sources to proactively manage water levels and quality.	•Designate and support vulnerable sectors with alternative water supplies and conservation measures during drought. •Activate contingency plans based on monitoring data to mitigate the immediate impact on water availability.	• Construct resilient water infrastructure projects that ensure long-term availability and quality of water for all sectors. Launch initiatives that promote sustainable water use and educate the community on water conservation practices to protect this vital resource.

Figure 35 - Drought Resilience, Adaption and Management Model Pillars – Water Security Projects

Timeline

Figure 36 - Timeline – Water Security Projects

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Economic Analysis

An economic analysis for the Water Security Projects follows. The analysis included identification of the Costs and Benefits of the projects, and the completion of a Cost Benefit Analysis.

This Cost Benefit Analysis methodology employed, was consistent with the real options methodology of the NSW Treasury Guidelines and remained within the cash flow framework of Treasury's recommended rapid cost-benefit analysis technique.

Accordingly, the nature of the technique, is to assess benefits and costs at a high level, using readily available secondary data, but not undertaking primary research. Where primary research is lacking, the assessment proceeds by estimating through a decision tree the likely costs and benefits of each "known unknown" in the project logic and incorporating this assessment on a risk (probabilistic basis) in the analysis.

To deliver on this methodology economic data needs included:

- Available secondary data sources, including past assessments of proposals, or of related projects; and
- Rapid assessment, using those sources, of the project logic as integrating within the plan logic.

Additional specific project-related data was also utilised:

- Water Security ○ Groundwater assessments and water reliability studies for the region and its member Councils. This may include aquifer assessments, bore monitoring programs, or water supply assessments including groundwater. Key data sources were the respective Councils and the NSW State planning bodies (Regional Water Plans).
- Water Security Planning ○ Existing water planning for the wider region, including Western Regional Water Strategy, and identifying from Councils. The key sources were existing water plans.

For the shortlisted water security options, five options were deduced for analysis:

- Base Case – Planning without Options – It is assumed for the sake of clarity, that considering a program with up to six projects will incorporate a base level of expenditure on planning.
- Option 1 – Groundwater – Investigation and development of bore fields in the region.
- Option 2 – Off Stream Storage at Walgett – A proposed off stream storage near the Namoi Barwon River Junction.
- Option 3 – Weir Raising – As part of the second option, a benchmarked weir upgrade.
- Option 4 – Off Stream Storage Generic – As part of the second option, an alternative.
- Option 5 – Cobar Water Reuse – A water recycling project in the town with the greatest industrial demand for water in the region.

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Costs

Groundwater

The costing for the groundwater project has been developed using dispersed investment of exploratory and production bore drilling, repeated across a three-phase project at a total cost of $0.6 M. Test drilling and field development will contribute $120,000. Productions is based on three production bores, each with a drilling and lining cost of $15,000, and a pump and piping cost (near to treatment plant) of $35,000.

Water Security

The main report shortlists a number of projects on strategic water planning. To scope how these might be implemented, a range of storage options are evaluated in Options 2 to 5. The costs have been benchmarked from Queensland and NSW Studies.

	Capital Cost per Unit Capacity	Benchmark	Capacity	Cost	Notes
	$/ML	*Location*	*ML*	*$*	
Offstream Storage	$37,000	Walcha (Apsley)	300	$11,000,000	
Offstream Storage	$43,000	Tuross River Study	3,000	$130,000,000	Cost was revised as part of a variation.
	$/M of wall				
Weir Rehabilitation	$400,000	Darling weirs program	30	$12,000,000	See also Qld weir upgrades of $3m to $11M)

Figure 37 Capital Cost Benchmarks

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Benefits

The impact charts illustrate the likely benefits from the major options:

- Groundwater
  - Avoided emergency drinking water supply costs – typically valued in the literature at above $7 per kL.
  - Irrigation benefits – typically valued at crop gross margins of $3 per ML.
- Water Planning ○ Improved reliability of drinking water supply from better matching of storage and transmission. Values in terms of emergency supply costs avoided at $7 per kL.

	Bourke	Brewarrina	Cobar	Walgett
Population	2,340	1,356	4,059	5,253
Projected Population [2041]	1,556	931	2,555	3732
Drought Water Consumption (kL pa 2023)	101,739	40,478	176,478	228,391
Drought Water Consumption (kL pa 2041)	67,652	58,957	111,087	162,261
Household Water Consumption (kL per household pa)	597	400	203	300
Potable Water Consumption (kL per household pa)*	100	100	100	100

Figure 38 Population and Water Demand

Source: NSW Department of Planning Population Projects & NSW Department of Local Government Water Supply Statistics

*Estimated using urban individual use metering studies.

Groundwater

Groundwater is a significant variable in managing water security in the Far West Councils in this plan. Groundwater is used in town water supplies to ensure volume in droughts by providing supplementary water when for example, in drought, regulated releases cease from upstream storages (or in dry periods more generally, surface water quality declines with reduced flows).

Borefields are described as one of the key system assets in delivering Water Security. Groundwater accessed through borefields supplements surface water sources, particularly during periods of drought. The use of borefields requires careful management to prevent over-extraction, which can lead to declining water levels and quality.

Cost Benefit Analysis

The outcomes of the Cost Benefit Analysis, including a sensitivity analysis for each Water Security Option follows.

Results

The following tables show the results after costs are netted off from benefits.

Option	Net Present Value (NPV)	Benefit Cost Ratio (BCR)	NPV Rank out of 5	BCR Rank out of 5
Base Case: Planning without projects	-$195,238		-	-
Option 1: Water security: Groundwater	$1,258,513	5.131	**2**	**1**
Option 2: Water security: Offstream storage Walgett	$4,671,546	1.811	**1**	**3**
Option 3: Water security: Weir Raising	-$1,367,581	0.884	**5**	**5**
Option 4: Water Security: Offstream storage generic	-$470,114	0.957	**4**	**4**
Option 5: Water security: Cobar Water Reuse	$793,840	2.014	**3**	**2**

Figure 39 Rapid Cost Benefit Analysis Results

Source: Analysis using NSW Treasury Rapid BCA Model

Options 1, 2 and 5 have benefit cost ratios greater than 1 at 5% discount rate, while options 3 and 4 do not.

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Sensitivity and Distributional Analysis

The results are sensitive to discount rate in that all options have positive Net Present Values at a lower discount rate (3%), but options 3 and 4 retain a negative Net Present Value at a higher discount rate (7%).

Sensitivity	3% Discount Rate		7% Discount Rate		10% Discount Rate	
Option	NPV	BCR	NPV	BCR	NPV	BCR
Base Case	-$197,087		-$193,458		-$190,909	0.000
Option 1	$1,391,675	5.111	$1,142,186	5.146	$993,765	5.158
Option 2	$7,616,135	2.319	$2,596,053	1.452	$500,297	1.087
Option 3	$1,342,659	1.114	-$3,303,646	0.720	-$5,289,190	0.552
Option 4	$2,494,661	1.229	-$2,564,603	0.765	-$4,687,059	0.570
Option 5	$1,115,599	2.227	$566,258	1.815	$335,208	1.554

Figure 40 Sensitivity Testing - Discount Rate

The results are insensitive to cost and benefits variance up to +/- 20%.

	Costs +20%		Costs -20%		Benefits +20%		Benefits -20%	
Option	NPV	BCR	NPV	BCR	NPV	BCR	NPV	BCR
Base Case	-$234,286		-$156,190		-$195,238		-$195,238	
Option 1	$1,197,579	4.276	$1,319,447	6.413	$1,571,150	6.157	$945,877	4.105
Option 2	$3,520,118	1.510	$5,822,975	2.264	$6,757,284	2.174	$2,585,808	1.449
Option 3	-$3,728,533	0.737	$993,371	1.105	$719,855	1.061	-$3,455,017	0.707
Option 4	-$2,651,066	0.797	$1,710,839	1.196	$1,616,816	1.148	-$2,557,043	0.766
Option 5	$637,196	1.678	$950,484	2.517	$1,109,252	2.416	$478,428	1.611

Figure 41 Sensitivity to Cost and Benefit Variance

If costs fall and benefits rise by 20%, all projects become Net Present Value positive (BCR > 1).

Scenario	Low Case Scenario		High Case Scenario	
Option	NPV	BCR	NPV	BCR
Base Case	-$234,286		-$156,190	
Option 1	$884,943	3.420	$1,632,084	7.696
Scenario	**Low Case Scenario**		**High Case Scenario**	
Option	**NPV**	**BCR**	**NPV**	**BCR**
Option 2	$1,434,380	1.208	$7,908,713	2.717
Option 3	-$5,815,969	0.589	$3,080,808	1.326
Option 4	-$4,737,996	0.638	$3,797,768	1.435
Option 5	$321,784	1.342	$1,265,896	3.020

Figure 42 Sensitivity to Negatively Correlated Benefit/Cost Variance

The Low Case Scenario assumes a cost increase of 20% and a benefit decrease of 20% with a social discount rate of 5%.

The High Case Scenario assumes a cost decrease of 20% and a benefit increase of 20% with a social discount rate of 5%.

Distributional Results

The proposed project principally impacts the following groups:

- *Ratepayers* through costs and avoided costs, and reliability benefits of urban water supply;
- *Farmers and graziers* through the costs and benefits of irrigation and stock and domestic water supply; and
- *Aboriginal Communities* through the potential for improved water supply.

There will also be impacts on commercial and industrial businesses from such things as water recycling, but the numbers of these will be small.

Estimates of impact, separately for benefit and cost, for these groups were made as follows:

Stakeholder	Ratepayers			Farmers and graziers			Aboriginal communities		
Option	Costs	Benefits	NPV	Costs	Benefits	NPV	Costs	Benefits	NPV
Base Case	$195,238	$0	-$195,238	$0	$0	$0	$0	$0	$0
Option 1	$149,973	$485,982	$531,247	$299,945	$923,316	$623,371	$49,991	$153,886	$103,895
Option 2	$4,761,905	$7,300,082	$2,733,416	$595,238	$2,085,738	$1,490,500	$595,238	$1,042,869	$447,631
Option 3	$4,800,000	$6,262,309	$1,657,547	$6,000,000	$3,131,154	-$2,868,846	$1,200,000	$1,043,718	-$156,282
Option 4	$4,440,000	$6,260,789	$2,016,027	$5,550,000	$3,130,394	-$2,419,606	$1,110,000	$1,043,465	-$66,535
Option 5	$782,766	$1,419,354	$831,825	$147,846	$78,853	-$68,993		$78,853	$31,007

Figure 43 Estimates of impact, separately for benefit and cost

Governance Structure

The ‘owner’ of the initiative, and therefore the Chair of the Steering Committee for each project within the initiative will be at the discretion of the Far Northwest Joint Organisation and the respective Councils within the region.

Governance Structure for the project would comprise the following:

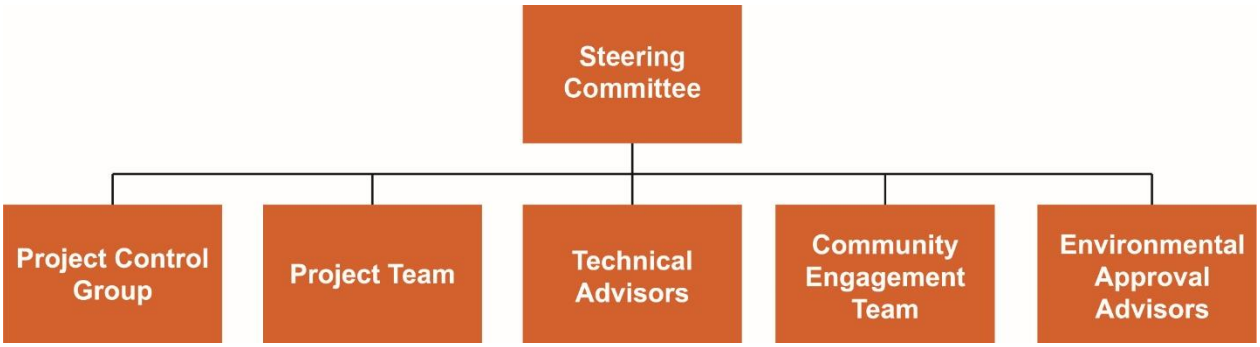

Figure 44 – Governance Structure – Water Security Projects

- Steering Committee: responsible for strategic direction, oversight, decision-making, and ensuring that the project aligns with the Regional Water Strategies. It could include representatives from the key stakeholders such as:
    - Department of Climate Change, Energy, the Environment, and Water (DCCEEW) – Water.
    - Water NSW. ○ Agriculture NSW. ○ NSW Farmers Association.
    - Representatives of identified agriculture industries.
- Funding Body: Representatives from the funding body such as ○ Future Drought Fund. ○ Australian Government National Water Grid.
    - NSW Government Representatives from DCCEEW – Water.
- Project Control Group (PCG): Responsible for monitoring progress, managing project risks, making decisions about day-to-day operational issues, and ensuring the project stays on schedule and within budget.
- Project Team: Comprising of Project Manager, Technical Team Members and Administrative Support.
- Technical Advisors: Experts in water management, agriculture, environmental science, and community engagement, would provide technical advice to feasibility studies
- Community Engagement Team: Manage stakeholder communications and engagement activities
- Environmental Approval Advisors: Oversee all environmental assessments, ensure compliance with regulations, and manage the environmental impact studies and development approvals process.

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A proposed adaptive framework for monitoring and updating the project / initiative follows.

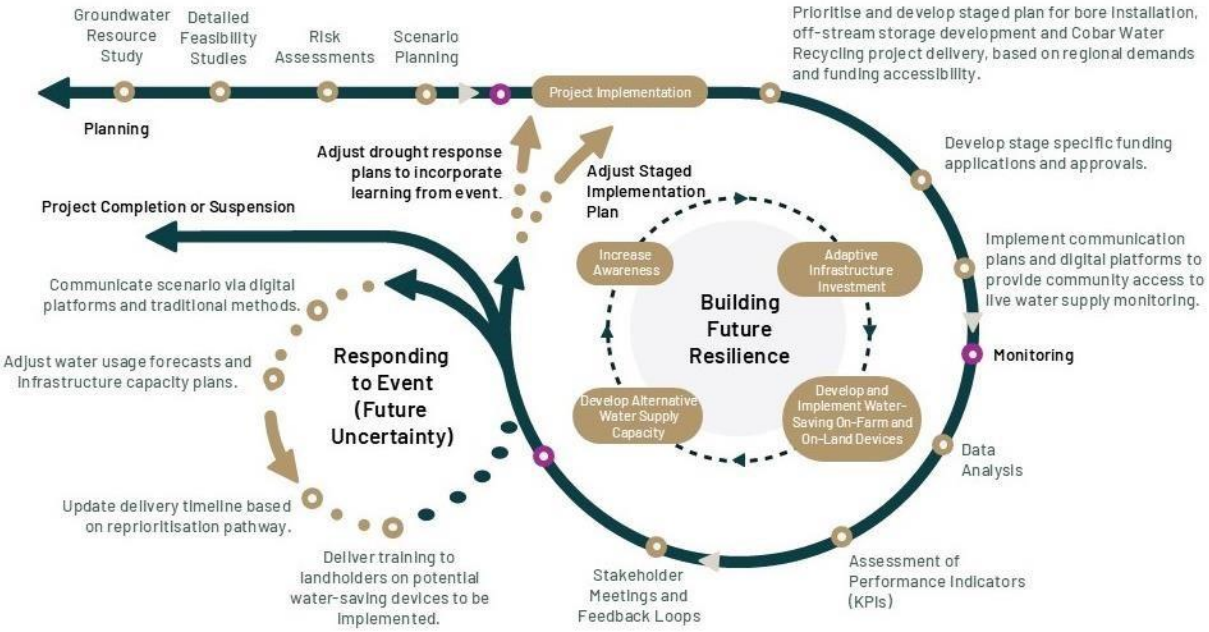

Figure 45: Framework for monitoring and updating the Long Term Water Security Project delivery (TSG 2024).

Responsiveness to Future Scenarios and Uncertainties

An analysis of the impact of potential future scenarios and uncertainties on the implementation and delivery of each project follows.

Future Scenario	Effect on Intended Project Outcomes	Changes to Project Implementation or Delivery for Prevention
Aging Population	Higher dependency ratio may limit the availability of active participants in project activities. Increased demand for healthcare services may divert resources from project needs.	Incorporate automation and advanced technologies to reduce labour dependency. Secure dedicated funding for healthcare to ensure it does not affect project resources.
Climate Change	Increased severity of droughts may strain project's water supply solutions. Greater demand for water management may require additional investment.	Enhance water-saving technologies and infrastructure to withstand extreme weather conditions. Plan for scalable infrastructure that can be expanded as demand increases.
Digital Divide	Limited access to technology could hinder project management and communication. Variation in technology and network coverage types could affect the implementation and compatibility of water security solutions on-farm.	Invest in improving digital infrastructure and training for local population. Ensure that water security solutions are compatible with all network types or software is available that can be upgraded to suit.

Future Scenario	Effect on Intended Project Outcomes	Changes to Project Implementation or Delivery for Prevention
Economic Decline	Loss of income for local businesses and reduced investment may lower project funding and support. Higher unemployment rates could reduce community resilience and cooperation. Loss of agricultural income could lower the economic benefits projected.	Diversify funding sources and create economic incentives for local businesses to engage with the project. Create job opportunities through the project e.g. for installation of bores, etc, to boost local employment and economic stability, Promote diversified and sustainable agricultural practices to enhance resilience.
Health Crises	Increased health issues may divert attention and resources away from the project. Strain on healthcare services could reduce overall community resilience.	Implement health and safety protocols to protect project participants and the community.
Housing Shortages	Increased homelessness or poor housing conditions could affect community stability and project participation. Higher rental and property prices may reduce disposable income for other essential needs.	Develop affordable housing solutions in conjunction with the project to support community stability. Secure funding for affordable housing and provide support for low-income families.
Increased Frequency of Floods	Flood damage could disrupt project timelines and increase costs. Displacement of communities may reduce the project's reach and effectiveness.	Design flood-resistant infrastructure and create comprehensive flood response plans. Include flood mitigation measures and relocation plans in project design.
Infrastructure Damage	High repair costs and maintenance may divert funds from other project activities. Disruption of economic activities could reduce project effectiveness.	Invest in resilient infrastructure and regular maintenance to mitigate damage risks. Establish emergency response plans and contingency funding for infrastructure repair.
Outmigration	Reduced workforce may hinder project execution and maintenance. The number of people benefited from each bore, and the prioritisation of bore projects may be affected.	Develop training programs for local workforce to ensure skills availability. Frequently assess and adjust the prioritisation order of bore implementation before installation to ensure that the bores are installed in order of greatest demands and service.

Future Scenario	Effect on Intended Project Outcomes	Changes to Project Implementation or Delivery for Prevention
Policy Shift	Changes in policy could affect funding and regulatory support for the project. New environmental regulations may increase project costs and complexities. Altered economic policies could create uncertainty for project planning and implementation. Shifts in social policies may impact community support and participation.	Engage with policymakers to ensure continued support and adapt project plans to align with new policies. Plan for regulatory compliance and budget for potential cost increases due to policy changes. Develop flexible project plans that can adapt to policy changes and maintain stakeholder engagement. Increase community outreach and education to align project goals with social policy changes.
Water Quality Degradation	Reduced agricultural output may impact economic benefits expected from the project. Higher water prices could affect community affordability and support. Poor water quality could undermine the benefits of improved water supply. Health risks may lower community support and participation.	Implement robust water management practices and promote efficient water use in agriculture. Subsidise water costs for vulnerable populations and ensure fair water pricing mechanisms. Enhance water treatment facilities and monitoring systems to ensure high water quality. Conduct regular water quality assessments and maintain transparent communication with the community.

Figure 46: - Analysis of the impact of potential future scenarios and uncertainties

Monitoring, Evaluation and Learning – Pillar Implementation

Success measures and indicators that might be used by the Project Steering / Control Group for the project to measure the extent of progress towards the outcomes expressed in the program logic and delivery of the project follow.

Pillar 1: Planning and Monitoring

- *Groundwater Quality and Flow Auditing:* Implement a comprehensive auditing system for the existing bore network, focusing on both groundwater quality and flow rates.
- *Centralised Database Development:* Create a centralised database to collate groundwater quality data from various sources, including industry and government, for unified monitoring and analysis.
- *Regular Sampling Programs:* Establish regular groundwater sampling programs to continuously monitor and update water quality and flow data.
- *Technology Investment:* Invest in advanced technologies and research to enhance understanding of treated groundwater's potential for supporting towns, landholders, and industries.
- *Feasibility Studies and Environmental Impact Assessments:* Conduct thorough feasibility studies and environmental impact assessments for each proposed water security project, ensuring sustainability and viability.
- *Community and Stakeholder Engagement:* Engage with local communities and stakeholders to gather input and ensure the projects meet local needs and gain necessary support and approvals.

Pillar 2: Responding to Drought Events

- *Emergency Groundwater Supply Systems:* Develop and maintain emergency groundwater supply systems, including the installation of standpipes for immediate water access during drought periods.
- *Off-Stream Storage Solutions:* Implement off-stream storage solutions in critical areas like Walgett to provide reliable water supply during droughts, reducing dependence on emergency measures.
- *Water Reuse Initiatives:* Promote and implement water reuse projects, to maximise available water resources, especially in high-demand areas like Cobar.
- *Drought Resilient Infrastructure:* Upgrade existing water infrastructure to ensure it is resilient to drought conditions, including raising weirs and improving leakage reduction programs.
- *Rapid Response Teams:* Establish rapid response teams equipped with the necessary tools and resources to address water supply disruptions promptly during droughts.
- *Public Awareness Campaigns:* Conduct public awareness campaigns to educate the community about water conservation practices and the importance of efficient water use during drought periods.

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Pillar 3: Building Future Resilience

- *Sustainable Water Management Practices:* Promote sustainable water management practices among local farmers, industries, and communities to ensure long-term water security.
- *Innovative Water Storage Solutions:* Develop innovative water storage solutions, such as off-stream storage and advanced borefields, to enhance the region's capacity to store and manage water.
- *Groundwater Research and Development:* Support ongoing research and development efforts to explore new methods for utilising groundwater resources effectively and sustainably.
- *Infrastructure Investment:* Invest in durable and adaptable infrastructure that can withstand variable climate conditions and ensure a reliable water supply.
- *Economic Diversification Initiatives:* Encourage economic diversification through support for local entrepreneurship in tourism and other industries less dependent on water.
- *Community Education and Training:* Implement educational programs and training sessions to build community knowledge and skills in water management, conservation, and drought resilience.
- *Policy Development and Advocacy:* Advocate for policies that support sustainable water management and provide funding for resilience-building projects, ensuring long-term water security for the region.

Monitoring Against Objectives

The applicable objectives of the Future Drought Fund Agreement, and relevant project level indicators to track outcomes and how the project is contributing to drought resilience outcomes follow.

Objective 1: Develop the environmental resilience and natural capital of agricultural landscapes.

1. Reduction in Water Extraction Rates – 20% reduction in water extraction from aquifers within 5 years of the completion of the bore installation.
2. Increase in Groundwater Quality – 15% improvement in groundwater quality parameters e.g. reduction in contaminants, within three years of project completion.
3. Expansion of Off-Stream Storage Capacity – Additional off-stream storage capacity installed and operational within two years of project initiation.
4. Implementation of Water Reuse Systems – 75% of Cobar Shire's industrial water use to be supplied by water reuse systems within 10 years of project delivery.
5. Positive feedback from community stakeholders on the effectiveness and environmental benefits of the new water infrastructure.
6. Adoption of best practices in sustainable water management by 50% of local farmers within three years of project initiation, evidenced by participation in training programs and implementation of recommended techniques.
7. High level engagement and satisfaction from environmental groups and local communities regarding project activities and outcomes.

Objective 2: Understand and plan for the region's current and future drought resilience by identifying actions, pathways, and opportunities for mitigation, adaptation and improvement.

1. Implementation of Drought-Resilient Infrastructure – 60% of planned drought-resilient infrastructure projects completed within five years of project commencement.
2. Reduction in Emergency Water Supply Costs – 25% reduction in costs associated with emergency water supply measures within five years of project completion.
3. Increase in Water Supply Reliability – 30% drought-on-drought improvement in the reliability of water supply to towns e.g. Walgett, during drought periods.
4. Stakeholder Awareness and Preparedness – Increased awareness and preparedness among stakeholders and community members, assessed through surveys and participation rates in educational workshops.
5. Effectiveness of Drought Mitigation Strategies – Positive feedback from local farmers and industries on the effectiveness of implemented drought mitigation strategies.
6. Integration of Community Input in Planning – Successful incorporation of community feedback and local knowledge into the planning and execution of water security projects.
7. Resilience of Local Economies – Perceived resilience and adaptability of local economies to drought conditions, based on interviews and focus groups with local businesses and residents.

Telecommunications Security

Project Description

Improve the 4G and 5G telecommunications infrastructure in the rural region to support the operational continuity of local businesses, community and agricultural activities and improve the community's confidence in their economic stability.

The initiative arises from significant challenges currently faced by the region, where existing telecommunications infrastructure fails to meet the growing demands for digital connectivity and is vulnerable to disruptions caused by natural disasters.

In late 2023, telecommunication service providers announced the departure of 3G networks across Australia. The current 3G network coverage experienced by the region is:

Figure 47: Telstra 3G Network Coverage Cobar Region (prior to termination).

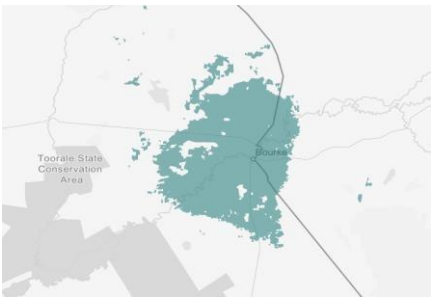

Figure 48: Telstra 3G Network Coverage Bourke Region (prior to termination).

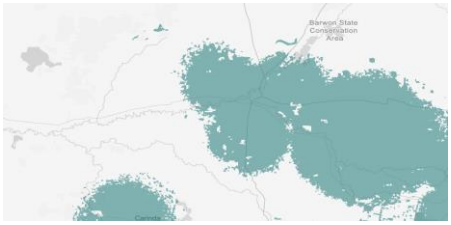

Figure 49: Telstra 3G Network Coverage Walgett Region (prior to termination).

The effect to be achieved and outcome from the project, arising from the shutdown of the 3G network is to:

- Reduce the network disruption experienced by emergency services, decreasing healthcare access and increase emergency response times.
- Address the impact of the Agtech devices, applications and software within the agricultural sector that will no longer be operational.

Scope

The scope of the telecommunications security projects includes:

- Assessment of the viability, sustainability, and environmental impact of the proposed telecommunications strategy.
- Identification of partner telecommunications providers.
- Development of a telecommunications plan to address gaps within the telecommunications strategy.
- Upgrade of existing and installation of new telecommunications infrastructure to extend and enhance 4G and 5G coverage throughout the region.
- Conduct of technical / feasibility study to identify the measurement of water productivity and water sustainability indices for cotton production systems, to identify potential changes to water use, productivity and sustainability, particularly through use of Agtech technologies.
- Establishment of a grant program to assist agricultural producers to purchase functioning Agtech devices and applications.

Pathway to implementation

The pathway to the delivery of the initiative includes:

1. Conduct of the assessment related to the proposed telecommunications strategy, and the associated feasibility and technical studies.
2. Identification of partner telecommunications providers.
3. Development of a telecommunications plan to address identified shortfalls in the telecommunications strategy 4. Environmental assessments.
5. Detailed cost estimate.
6. Complete full business case.
7. Funding applications / arrangements and regulatory approvals.
8. Tender (as requried) for construction of new and upgrade of existing infrastructure.
9. Establishment of the ‘agtech’ grant program (including associated education and training programs).

Supporting Broader Resilience

The telecommunications projects will contribute to improving drought resilience of the Far Northwest Region through:

- Transforming the emergency services and ‘agtech’ communications infrastructure and capability.
- Modifying the existing water monitoring capability of the agricultural sector.
- Maintaining sustainability of local businesses, tourism and agricultural operations, through the provision of a resilient telecommunications system.

Additionally, the relevance of the project to improving the resilience of the region to identified challenges follows.

Challenge	Telecommunications Security Relevance
Economic Hardship	Secure telecommunications allow families facing economic hardship to access financial services remotely, such as online banking, applying for aid, or seeking employment opportunities. It also enables e-commerce for businesses trying to reach wider markets outside drought-impacted areas, helping sustain local economies.
School Closures or Reduced Services	With schools and health facilities potentially closing (decreased demand, operational challenges or funding) or reducing services (due to downsize from families moving away), reliable telecommunications is required for continuing education through online platforms and accessing telehealth services. This ensures that education and healthcare services are uninterrupted, bridging the gap caused by physical service disruptions.
Labour Needs on Farms	As labour demands increase on farms, telecommunications can facilitate the use of smart farming techniques, which can be monitored remotely, reducing the need for constant physical presence. This allows families to balance educational and health priorities alongside agricultural responsibilities.
Health Issues	Secure telecommunications networks ensure that individuals facing health issues can continue to access health information and Telehealth services without needing to travel. This is important in managing both emergency and health conditions when local health resources are strained or inaccessible.
Transportation	When transportation is unreliable or inaccessible, telecommunications provide a link to the outside world. Secure networks ensure that virtual meetings, remote schooling, and digital healthcare consultations are possible, mitigating the impact of disrupted physical mobility.
Psychological Stress	Reliable telecommunications support mental health by enabling access to online counselling and support groups, which are more common during times of increased stress and isolation caused by drought. These services help maintain mental well-being and provide coping mechanisms for individuals and communities facing prolonged drought conditions.

Figure 50: Analysis of Resilience Challenges as associated with the project

The projects support the pillars of drought resilience as follows:

Pillar 1: Planning and Monitoring	Pillar 2: Responding to Drought Events	Pillar 3: Building Future Resilience
•Identify telecommunications blackspots of 4G and 5G networks. •Plan for the upgrade and expansion of 4G and 5G networks. •Monitor current network usage and predict future demands to inform infrastructure improvements.	•Identify and prioritise network support for critical agricultural operations and essential businesses during drought conditions. Timely data about weather changes, soil moisture, and crop conditions can significantly mitigate the impact of drought on agricultural productivity. •Implement emergency communication protocols to maintain connectivity for critical services when standard infrastructure fails. For droughtstricken areas, this means ensuring that critical updates regarding water availability, relief programs, and health advisories reach all community members reliably and quickly.	•Invest in resilient telecommunications infrastructure capable of withstanding extreme weather events. •Foster innovative tech solutions to ensure uninterrupted connectivity and support the digital needs of businesses and agriculture.

Figure 51 - Drought Resilience, Adaption and Management Model Pillars – Telecommunications Projects

Timeline

Figure 52 - Timeline – Telecommunications Security Projects

Economic Analysis

An economic analysis for the Telecommunications Project follows. The analysis included identification of the Costs and Benefits of the projects, and the completion of a Cost Benefit Analysis.

This Cost Benefit Analysis methodology employed, was consistent with the real options methodology of the NSW Treasury Guidelines and remained within the cash flow framework of Treasury's recommended rapid cost-benefit analysis technique.

Accordingly, the nature of the technique, is to assess benefits and costs at a high level, using readily available secondary data, but not undertaking primary research. Where primary research is lacking, the assessment proceeds by estimating through a decision tree the likely costs and benefits of each "known unknown" in the project logic and incorporating this assessment on a risk (probabilistic basis) in the analysis.

For the cost-benefit analysis, the telecommunications strategy was assessed against a base case.

- Base Case – Planning without Projects – A base level of expenditure based on current planning for water security and telecommunications within the regions is assumed.
- Telecommunications Upgrade – Improve telecommunications connectivity (4G and 5G) in the region to support business and agricultural productivity.

Costs

The costs have been calculated on benchmark estimates by area and scope.

The principal tasks of the Telecommunications Security project was to investigate significant areas of non-connection to the mobile broadband network and to implement "black spot" investments to locate new towers so that there is a continuity of coverage. There have been a number of similar programs that can be used to benchmark costs.

Telecommunications	Cost per town/ community	Location	Number of communities	Total cost
Black spot review	$684,000	Remote Aboriginal communities	19	$13,000,000
Black spot review	$960,000	Outback Australia	43	$41,300,000

Figure 53 - Mobile Phone Coverage Investment

In addition, the project would have an optional extension to provide Agtech devices and appropriate support and training.

Item	Unit cost	Source
Water quality and agtech probes	$2,000	Market Price

Figure 54 – Agtech Cost

Benefits

The impact charges illustrate the likely benefits of the major options:

- Improved telecommunications offer safety and health benefits to the region. As permanent infrastructure, these benefits accrue both in and outside emergency situations like drought or flood.
- Safety: Emergency response time savings valued using risk and value of life.
- Health: Reduced transport cost to nearest health centre. Improved pre-care for emergency patients.
- Supporting the operational continuity of local businesses, community and agricultural activities.
- Improving the community's confidence in their economic stability.

These benefits can be further broken down into:

- Local business and community operational continuity benefits;
- Benefits for non-local users, either as receivers of telecommunications in other regions, or as visitors to the far-west region;
- Health related benefits for the local community;
- Technological benefits fo the proposed device program being used by farmers to give a more efficient water use.

Many of the benefits are driven by the town, regional or state population.

	Bourke	Brewarrina	Cobar	Walgett
Population	2,340	1,356	4,059	5,253
Projected Population [2041]	1,556	931	2,555	3732

Figure 55: Population

Source: NSW Department of Planning Population Projections and NSW Department of Local Government Water Supply Statistics

Measuring these benefits includes calculating the time savings from better telecommunications and valuing them using average earnings. The following Table shows the calculation of business and community continuity benefits:

General Telecommunications benefits		Notes
Black spots addressed	5	
Population Impacted	100%	
Time saving (hours per annum per person)	0.1	Estimate.
Value	$1,958	Average Weekly Earnings
Value per hour	$56	35-hour week
Value of time saving per annum	$5.59	
Total population Impacted	*21,757*	Population of the region
Impact on state population (hours per person)	0.001	
Value of times savings per annum per person	$0.06	
Total population Impacted	8,144,000	State Population

Figure 56 General Telecommunications Benefits

The total value in the Rapid Cost Benefit Analysis Model is calculated as the value of local time saving ($5.59 per person) times the local population, plus the value to the population as a whole per person, $0.06 times the state population.

Cost Benefit Analysis

The outcomes of the Cost Benefit Analysis, including a sensitivity analysis for the telecommunications security project follows.

Results

The following tables show the results after costs are netted off from benefits.

Option	NPV	BCR
Base Case: Planning without projects	-$195,238	
Telecommunications Upgrade	$9,424,809	4.709

Figure 57 Rapid Cost Benefit Analysis Results

Source: Analysis using NSW Treasury Rapid BCA Model

The telecommunications upgrade has a benefit cost ratio greater than 1 at 5% discount rate.

Sensitivity and Distributional Analysis

The telecommunications upgrade is sensitive to discount rate; however, remains positive at both the lower (3%) and higher (7%) discount rates assessed.

Sensitivity	3% Discount Rate		7% Discount Rate		10% Discount Rate	
Option	NPV	BCR	NPV	BCR	NPV	BCR
Base Case	-$197,087		-$193,458		-$190,909	0.000
Telecommunications Upgrade	$12,715,485	6.008	$7,089,257	3.788	$4,707,761	2.850

Figure 58 Sensitivity Testing - Discount Rate

The results are insensitive to cost and benefit variance up to +/- 20%.

	Costs +20%		Costs -20%		Benefits +20%		Benefits -20%	
Option	NPV	BCR	NPV	BCR	NPV	BCR	NPV	BCR
Base Case	-$234,286		-$156,190		-$195,238		-$195,238	
Telecommunications Upgrade	$8,916,656	3.925	$9,932,961	5.887	$11,817,923	5.651	$7,031,695	3.768

Figure 59 Sensitivity to Cost and Benefit Variance

If costs fall and benefits rise by 20%, the telecommunications strategy remains with a positive Net Present Value (BCR > 1).

Scenario	Low Case Scenario		High Case Scenario	
Option	NPV	BCR	NPV	BCR
Base Case	-$234,286		-$156,190	
Telecommunications Upgrade	$6,523,542	3.140	$12,326,075	7.064

Figure 60 Sensitivity to Negatively Correlated Benefit / Cost Variance

The Low Case Scenario assumes a cost increase of 20% and a benefit decrease of 20% with a social discount rate of 5%.

The High Case Scenario assumes a cost decrease of 20% and a benefit increase of 20% with a social discount rate of 5%.

Distributional Results

The proposed project principally impact the following groups:

- *Ratepayers* through costs and avoided costs, and reliability benefits of urban water supply;
- *Farmers and graziers* through the costs and benefits of irrigation and stock and domestic water supply; and
- *Aboriginal Communities* through the potential for improved water supply.

There will also be impacts on commercial and industrial businesses from such things as water recycling, but the numbers of these will be small.

Estimates of impact, separately for benefit and cost, for these groups were made as follows:

Stakeholder	Ratepayers			Farmers and graziers			Aboriginal communities		
Option	Costs	Benefits	NPV	Costs	Benefits	NPV	Costs	Benefits	NPV
Base Case	$195,238	$0	-$195,238	$0	$0	$0	$0	$0	$0
Telecommunications Upgrade	$1,641,600	$3,475,538	$2,029,176	$547,200	$1,223,353	$676,153	$547,200	$802,331	$255,131

Figure 61 Estimates of impact, separately for benefit and cost

Governance Structure

The 'owner' of the initiative, and therefore the Chair of the Steering Committee for each project within the initiative will be at the discretion of the Far Northwest Joint Organisation and the respective Councils within the region.

Governance Structure for the project would comprise the following:

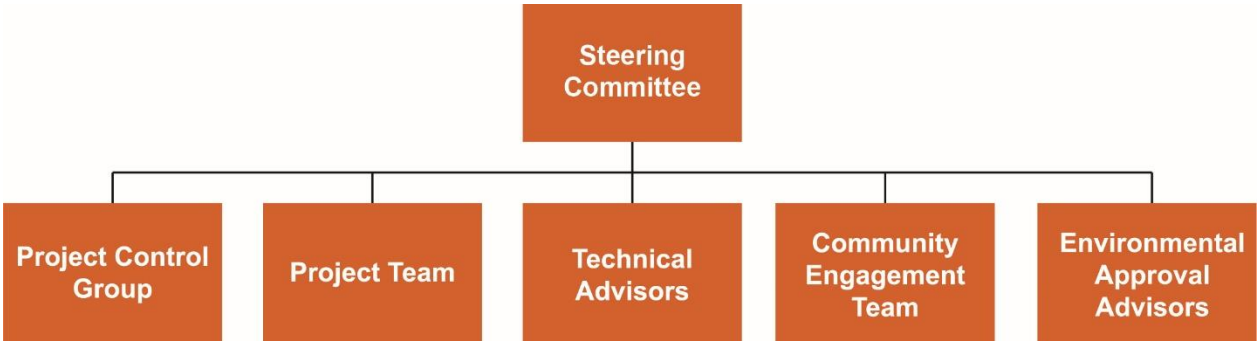

Figure 62 – Governance Structure – Telecommunications Security Projects

- Steering Committee: responsible for strategic direction, oversight, decision-making, and ensuring that the project aligns with funding program. It could include representatives from the key stakeholders such as:
    - Federal/State Governments ○ Telecommunications Regulators ○ Mobile Network Operators
    - Mobile Network Infrastructure Providers

- Project Control Group (PCG): Responsible for monitoring progress, managing project risks, making decisions about day-to-day operational issues, and ensuring the project stays on schedule and within budget.
- Project Team: Comprising of Project Manager, Technical Team Members and Administrative Support.
- Technical Advisors: Experts in telecommunications, environmental science, and community engagement, would provide technical advice to feasibility studies
- Community Engagement Team: Manage stakeholder communications and engagement activities
- Environmental Approval Advisors: Oversee all environmental assessments, ensure compliance with regulations, and manage the environmental impact studies and development approvals process.

A proposed adaptive framework for monitoring and updating the project / initiative follows.

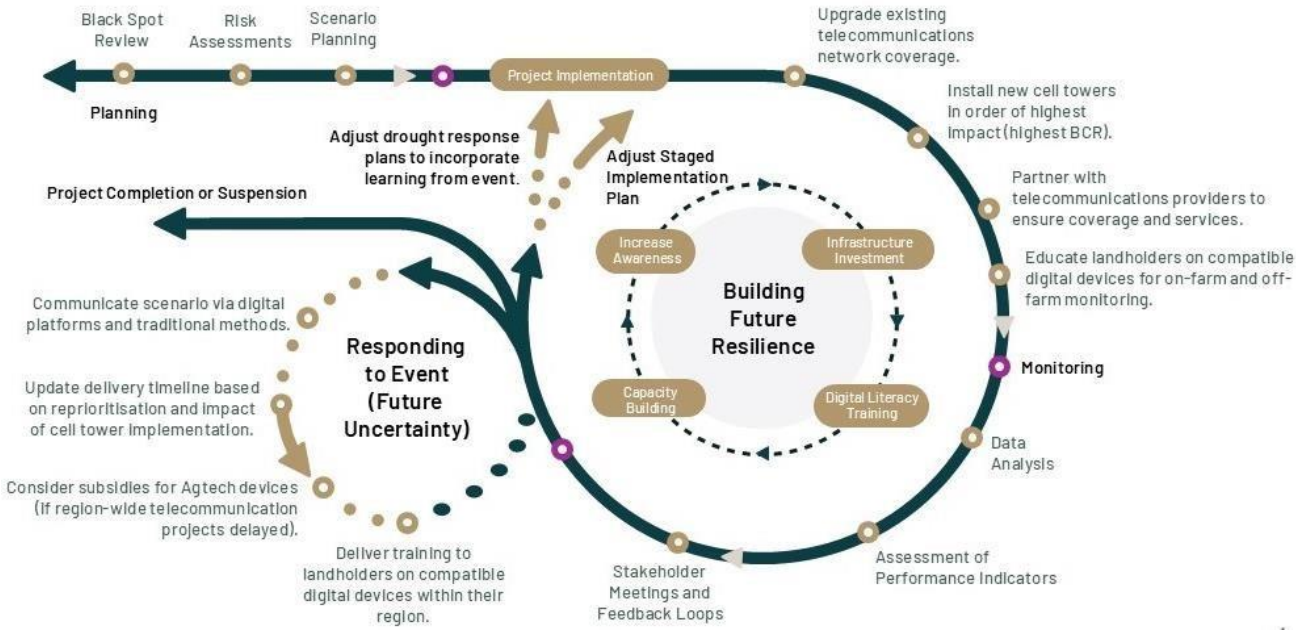

Figure 63: Framework for monitoring and updating Telecommunications Strategy delivery (TSG 2024).

Responsiveness to Future Scenarios and Uncertainties

An analysis of the impact of potential future scenarios and uncertainties on the implementation and delivery of each project follows.

Future Scenario	Effect on Intended Project Outcomes	Changes to Project Implementation or Delivery for Prevention
Aging Population	Higher dependency ratio may limit the availability of active participants in project activities. Reduced human – technology compatibility.	Incorporate automation and advanced technologies to reduce labour dependency. Ensure that technology interfaces are simple and accessible for all. Provide additional on-farm and off-farm training for residents in how to utilise software.
Climate Change	Increased severity of natural disasters (e.g. floods, bushfires) may damage telecommunications infrastructure. Greater demand for reliable communication during emergencies.	Enhance infrastructure to withstand extreme weather conditions. Implement disaster-resistant designs and materials for new installations.

Future Scenario	Effect on Intended Project Outcomes	Changes to Project Implementation or Delivery for Prevention
Digital Divide	Limited access to technology could hinder project benefits for remote areas. Changing network coverage types e.g. 3G to 4G to 5G, may affect the compatibility of on-farm and off-farm devices.	Focus on expanding coverage to remote and underserved areas. Ensure that devices available are compatible with all network types. Implement digital literacy programs to ensure effective use of new telecommunications technology.
Economic Decline	Decreased local investment and spending could impact the funding and expansion of telecommunications infrastructure. Higher unemployment may reduce demand for high-speed internet and related services. Reduced income from agriculture could lower the investment capacity of farmers for Agtech solutions dependent on telecommunications	Secure diversified funding sources including government grants and private investments. Offer flexible pricing plans and financial assistance programs to maintain service uptake. Provide financial incentives and subsidies for farmers to adopt Agtech.
Health Crises	Increased demand for remote healthcare services could strain network capacity and impact service quality. Heightened need for reliable communications during health emergencies.	Prioritise network enhancements in healthcare connectivity and bandwidth allocation. Develop specialised telehealth platforms with optimised performance during peak usage.
Housing Shortages and Conditions	Displacement of people due to housing shortages could disrupt project implementation and community support. Increased pressure on telecommunications infrastructure due to higher density living.	Integrate telecommunications infrastructure planning with housing development projects. Ensure scalable network solutions to accommodate fluctuating population densities.
Increased Frequency of Floods	Flooding could disrupt telecommunications services, particularly in low-lying areas, impacting emergency communications and daily activities. Potential loss of critical equipment and infrastructure.	Elevate critical infrastructure above flood levels and use waterproof housing for equipment. Implement flood sensors and automated alerts within the telecommunications network.
Infrastructure Damage	Damage to telecommunications infrastructure could lead to prolonged service outages, affecting businesses and emergency services. Increased repair and maintenance costs.	Develop a proactive maintenance schedule and rapid response teams for infrastructure repairs. Invest in advanced diagnostic and repair technologies to minimise downtime.

Future Scenario	Effect on Intended Project Outcomes	Changes to Project Implementation or Delivery for Prevention
Outmigration	Reduced local population could lower the demand for telecommunications services, affecting revenue and sustainability. Limited workforce for ongoing maintenance and upgrades.	Implement a remote monitoring and maintenance system to reduce dependency on local workforce. Develop incentives and partnerships with local businesses to boost economic activity and retain population.
Policy Shift	Regulatory changes could alter funding availability and project priorities. New policies might impose additional compliance costs and operational adjustments. Shifts in economic policies could create uncertainty for long-term project planning. Changes in social policies may influence community engagement and support for the project.	Engage with policymakers regularly to stay informed and influence supportive policies. Develop adaptable project plans that can quickly respond to regulatory changes. Allocate a contingency budget to address potential compliance costs. Enhance community outreach to ensure continued support despite policy shifts.
Water Quality Degradation and Shortages	Limited water availability could hinder the cooling systems for telecommunications equipment. Reduced agricultural productivity could affect the economic benefits of enhanced telecommunications for Agtech.	Implement water-efficient cooling technologies and systems. Develop integrated water management solutions with telecommunications infrastructure to support agriculture.

Figure 64: - Analysis of the impact of potential future scenarios and uncertainties

Monitoring, Evaluation and Learning – Pillar Implementation

Success measures and indicators that might be used by the Project Steering / Control Group for the project to measure the extent of progress towards the outcomes expressed in the program logic and delivery of the project follow.

Pillar 1: Planning and Monitoring

- *Comprehensive Connectivity Audit:* Conduct thorough audits of current 4G and 5G coverage and identify areas with connectivity gaps, particularly focusing on 'black spots' and underserved communities.
- *Centralised Data Management:* Develop a centralised database to monitor the progress of infrastructure upgrades and track connectivity improvements across the region.
- *Feasibility Studies and Environmental Impact Assessments:* Perform detailed feasibility studies and environmental impact assessments for proposed telecommunications projects to ensure sustainability and minimal ecological disruption.

- *Stakeholder Collaboration:* Engage with telecommunications providers, local businesses, and community groups to gather input and ensure the projects meet the specific needs of the region.
- *Scenario Analysis and Forecasting:* Use predictive models to assess the impact of various scenarios, such as natural disasters or economic shifts, on telecommunications infrastructure and plan accordingly.
- *Transport Reporting:* Maintain transparency by regularly publishing progress reports and updates for any stakeholders, highlighting improvements and addressing any issues encountered.

Pillar 2: Responding to Drought Events

- *Emergency Communication Systems:* Establish robust emergency communication systems to ensure reliable connectivity during droughts and other natural disasters.
- *Agtech Support Programs:* Implement grant programs to help farmers transition from 3G to more advanced Agtech devices and applications compatible with 4G and 5G networks.
- *Mobile Connectivity Solutions:* Deploy mobile cell towers and temporary infrastructure to maintain connectivity in affected areas during drought emergencies.
- *Community Support Initiatives:* Develop support initiatives to provide immediate assistance to communities during droughts, ensuring they have access to critical information and resources through reliable telecommunications.
- *Partnerships with Emergency Services:* Collaborate with emergency services to ensure they have the necessary telecommunications support for efficient operations during drought events.
- *Public Awareness Campaigns:* Conduct campaigns to educate the community on how to utilise the upgraded telecommunications infrastructure during emergencies for accessing essential services and information.

Pillar 3: Building Future Resilience

- *Sustainable Infrastructure Development:* Invest in telecommunications infrastructure designed to withstand extreme weather conditions and ensure long-term reliability.
- *Technological Innovation:* Promote the adoption of cutting-edge technologies and smart farming solutions that enhance water productivity and sustainability in agricultural practices.
- *Economic Diversification Programs:* Encourage economic diversification by supporting local entrepreneurship in digital services and remote work opportunities facilitated by improved connectivity.
- *Community Training and Education:* Implement training programs to educate the community and local businesses on the benefits and uses of advanced telecommunications technologies.
- *Research and Development:* Support R&D initiatives to explore new telecommunications solutions and innovations that can further enhance the region's resilience to drought and other environmental challenges.

- *Policy Advocacy and Development:* Advocate for policies that support the expansion and maintenance of telecommunications infrastructure, ensuring continuous funding and regulatory support.
- *Long-term Funding Strategies:* Develop long-term funding strategies, including public/private partnerships and government grants, to ensure sustained investment in telecommunications infrastructure and services.

Monitoring Against Objectives

The applicable objectives of the Future Drought Fund Agreement, and relevant project level indicators to track outcomes and how the project is contributing to drought resilience outcomes follow.

Objective 1: Develop the agricultural sector's self-reliance and economic performance.

1. Increase in Agricultural Productivity – 25% increase in crop yield per hectare within five years of telecommunication upgrade roll-out due to improved water management and Agtech adoption.
2. Adoption of Agtech Devices – 80% of local farmers using advanced Agtech devices and applications with three years of project delivery.
3. Reduction in Water Use per Unit of Output – 30% reduction in water use per unit of agricultural output within five years of project delivery.
4. Increase in Market Access – 20% increase in the number of local agricultural products reaching national and international markets within three years of project delivery.
5. Farmer Satisfaction – Positive feedback from farmers on the effectiveness and usability of Agtech devices and applications, collected through biannual survey.
6. Innovation in Farming Practices – Increase in innovative farming practices and techniques adopted, based on annual reports from agricultural advisors.
7. Community Engagement – High levels of engagement and participation in training sessions and workshops related to Agtech and water management.

Objective 2: Strengthen the social capital and wellbeing of the communities.

1. Community Event Participation – 50% increase in participation rates at community events and social gatherings within three years of project completion (result of greater awareness from digital communication around events).
2. Access to Telehealth Services – 90% of residents having reliable access to telehealth services within two years of project initiation.
3. Reduction in Social Isolation – 25% decrease in reported cases of social isolation and loneliness within the community within five years of project initiation.
4. Community Wellbeing – Improved community wellbeing and cohesion, assessed through regular surveys and focus groups.
5. Resident Satisfaction – High levels of satisfaction with communication and support networks, based on biannual survey results.

Objective 3: Understand and plan for the region's current and future drought resilience by identifying actions, pathways, and opportunities for mitigation, adaptation and improvement.

1. Implementation of Resilient Infrastructure – 70% of planned resilient telecommunications infrastructure projects completed within four years of project initiation.
2. Reduction in Service Disruptions – 40% reduction in telecommunications service disruptions after project completion.
3. Increase in Emergency Response Efficiency – 50% improvement in emergency response times facilitated by enhanced telecommunications infrastructure.
4. Effectiveness of Mitigation Strategies – Positive feedback from local businesses and communities on the effectiveness of implemented mitigation and adaptation strategies.

Stronger Communities Program

Project Description

Residents of the Far Northwest region frequently experience increased stress during drought conditions. During Droughts the situation is worsened:

- By the departure of key services and community members, which puts additional strain on the remaining volunteers and community leaders.
- As there is a noticeable lack of support or awareness of the available aid during these times.
- As various social events were organised with a primary focus on drought-related themes. This approach often limited opportunities for community members to engage and interact without the constant overshadowing of drought conditions.
- As the sole reliance of farming for a large majority of businesses within the region, increases vulnerability of businesses during periods of drought.

The community has expressed a significant need for better data on the social effects of drought and the effectiveness of mental health interventions to address these issues effectively.

The Stronger Communities Program is designed to improve community cohesion, well-being and financial resilience in the Far Northwest Region through:

- A series of targeted activities and frameworks specifically designed to maintain and improve the social fabric of rural and regional communities, and the resilience of businesses, particularly during challenging periods of drought.
- Events held regularly (monthly), in different towns across the region, regardless of 'drought' periods, to foster and promote social connectivity and stronger communities. These events

  aim to provide opportunities for community members to engage with each other in a relaxed environment, with a focus on interaction rather than drought discussion.
- Events designed to coincide with existing regional events (shows, festivals, etc), and will have some reliance on partnerships with local businesses and services. While not intended to be a counselling service, counselling representatives will be in attendance to establish trust and connections for those experiencing mental health challenges.
- The incorporation of Rural Financial sessions and mentoring to improve the knowledge, skills and strategies of local farmers and businesses to better plan for, respond to, and recover from drought events.

FAR NORTH WEST JOINT ORGANISATION

Scope

The scope of the ‘stronger communities‘ program includes:

- Activities and events aimed at promoting social cohesion and connectivity, supported by council-led initiatives.
- Regular, targeted consultations with key demographic groups, (including First Nations people, young families, and the youth), to incorporate their insights into resilience planning
- Community sports activities and events designed to counter social isolation and bolster mental health, particularly among young men.
- Provision of administrative support roles to alleviate the workload on volunteers and community leaders during droughts.
- Content development for financial resilience sessions e.g. government assistance, debt mediation, risk management, business diversification, etc.
- Delivery of financial resilience sessions.
- Provision of community resources to serve as innovation hubs for developing drought resilience solutions.
- Development of a socially focused drought resilience framework to evaluate the impact of drought and the effectiveness of support programs.
- Development and delivery of educational programs, direct business mentoring, and the promotion of innovative practices that enhance drought resilience.

Pathway to implementation

The pathway to the delivery of the initiative includes:

1. Formation of a Steering and Project Control / Working Group under the respective Council.
2. Development of a plan (that includes stakeholder engagement) to underpin the implementation of activities and events aimed at promoting social cohesion and connectivity (targeted consultations, community events and activities).
3. Development of a socially focused drought resilience framework to evaluate the impact of drought and the effectiveness of the support programs.
4. Detailed cost estimate (activities, (including the financial resilience sessions) and administrative support roles).
5. Design of the administrative support roles.
6. Funding applications and approvals.
7. Content development for financial resilience sessions.
8. Development of the detailed program of events / activities.
9. Scheduling and advertising of events / activities.
10. Conduct and evaluation of activities.

FAR NORTH WEST JOINT ORGANISATION

Supporting Broader Resilience

The ‘stronger communities’ program projects will contribute to improving drought resilience of the Northwest Region through:

- Modifying the existing system for the provision of support during periods of drought.
- Maintaining the social cohesion and connectivity of the region.

Additionally, the relevance of the project to improving the resilience of the region to identified challenges follows.

Challenge	Stronger Communities Program Relevance
Social Isolation and Mental Health	Programs aimed at enhancing social cohesion and providing mental health support reduce the strain on community members, improving overall community well-being during drought periods.
Reduced Community Services	Increasing the capacity of local services and supporting volunteer leaders, the program helps maintain essential community functions during challenging times.
Reduced Community Knowledge Sharing Opportunities	Encourages connection among community members, enabling them to share effective coping strategies and support each other through the collective experiences of managing drought impacts.
Sports Facility Maintenance	Supports the maintenance of sports facilities which suffer during droughts, ensuring they remain operational. This maintains opportunities for physical activity and social interaction, important for mental and physical health during challenging periods.
Decline in agricultural productivity	By providing educational programs and strategic management tools, the program helps farmers make informed decisions during critical phases of drought, such as destocking or modifying farming plans to preserve resources, thereby mitigating the severity of productivity losses.
Economic contraction and loss of employment	The program promotes diversified income sources, such as tourism and alternative agricultural practices, reducing the sole reliance on traditional farming. This diversification helps stabilise local economies and retain populations during droughts, thereby sustaining employment and economic activity.
Environmental degradation	Training and support in innovative farming practices and environmental management are central to the program, helping farmers adopt sustainable practices that maintain soil health and reduce environmental impact during drought conditions.

Figure 65: Analysis of Resilience Challenges as associated with the project

The projects support the pillars of drought resilience as follows:

Pillar 1: Planning and Monitoring	Pillar 2: Responding to Drought Events	Pillar 3: Building Future Resilience
•Engage in data collection and regular community consultation to inform resilient planning and support system development. •Support the development of regional drought resilience and management plans, ensuring they reflect the community's needs. •Educate farmers and business owners on proactive decision making using facts and figures through workshops and one-on-one mentoring. •Incorporate responsive planning and agricultural practices.	•Launch community activities and support services quickly during drought periods to maintain social networks and well-being. •Implement administrative support roles to alleviate pressures on community leaders and volunteers. •Identify vulnerable sectors within agriculture and local businesses that require support during drought. •Develop targeted support mechanisms for these groups.	•Develop enduring community facilities and infrastructure that contribute to long-term drought resilience and community well-being. •Foster local leadership and entrepreneurship, particularly among the youth, to drive community initiatives that build resilience. •Encourage the adoption of innovative farming practices and diversification strategies. •Collaborate with stakeholders to develop infrastructure and business models that can withstand drought conditions. •Undertake measures such as workshops and consultations to mitigate the impacts of drought and enhance long term resilience.

Figure 66 - Drought Resilience, Adaption and Management Model Pillars – Stronger Communities Program

Timeline

Figure 67 - Timeline – Stronger Communities Program

Budget

Specific budgets to be allocated post-consultation phase for each activity, with considerations for infrastructure, personnel, and marketing.

Accordingly, an economic analysis for this program has not been able to be completed within this plan.

Governance Structure

The ‘owner’ of the initiative, and therefore the Chair of the Steering Committee for each project within the initiative will be at the discretion of the respective Council within the region.

Governance Structure for the project would comprise the following:

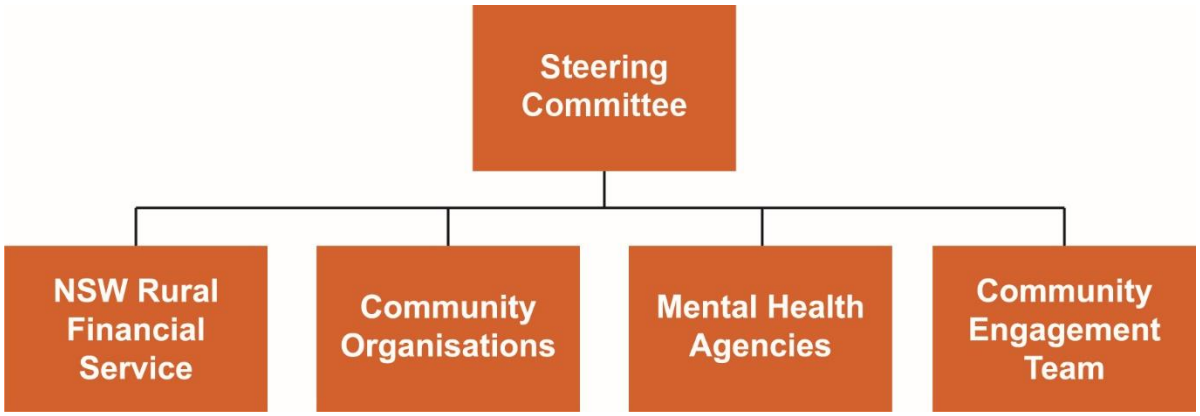

Figure 68 – Governance Structure – Stronger Communities Program

The Steering Committee is responsible for the strategic direction, oversight, decision-making, and ensuring that the project aligns with a funding program. A proposed adaptive framework for monitoring and updating the project / initiative follows.

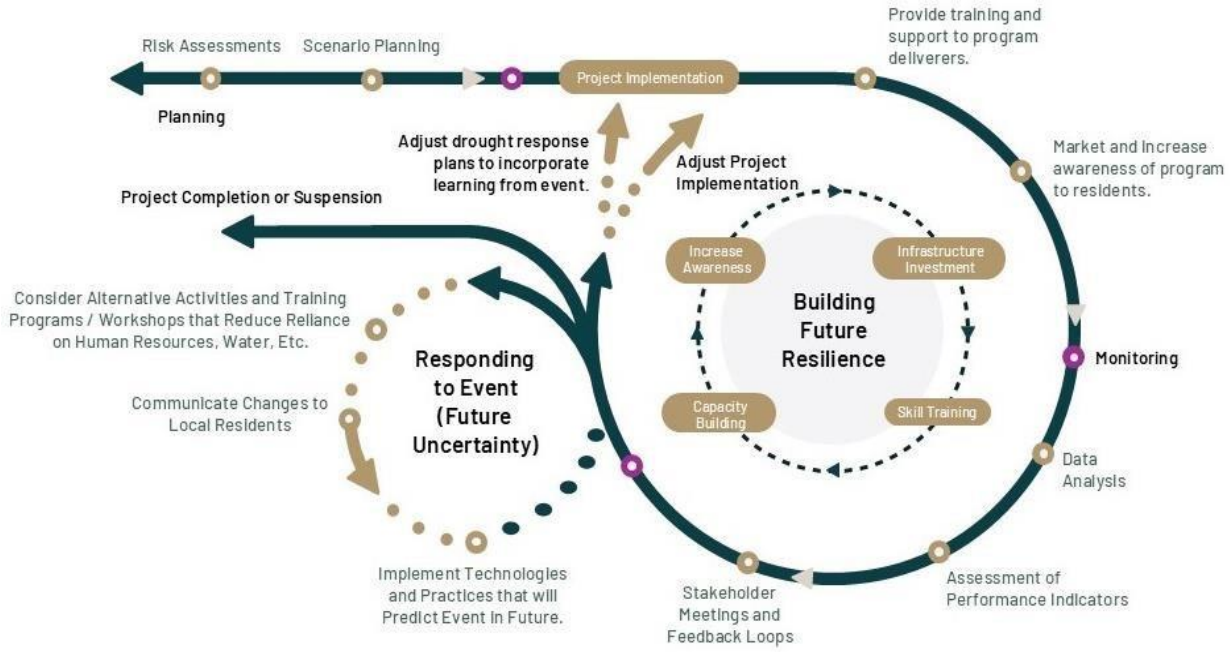

Figure 69: Framework for monitoring and updating the Stronger Communities Program (TSG 2024).

Events Schedule

Events should be aligned to existing community events where possible, particularly sporting/cultural events that are already in the calendar.

Western Local Health District – Primary Health Network sponsoring events like these:

Date	Location	Event Title	Event Description	Sponsor
October 13, 2024	Bourke Racecourse	Back of Bourke Rodeo	A fun-filled day with BBQ, sack races, tug-of-war, and face painting.	Bourke Footy Club
October 15, 2024	Bourke Community Hall	Financial Basics for Rural Families	Workshop covering financial literacy, budgeting, and saving strategies for families in rural areas.	Rural Financial Counselling Service NSW
December 5, 2024	Online	Managing Finances During Drought	Webinar focusing on strategies to manage finances during drought periods, including emergency funds and resource allocation.	Rural Financial Counselling Service NSW
December TBC, 2024	Cobar Christmas Party	All Community Christmas Party	Partner with Council and local organisations to throw a Christmas Street Market and Parade	Cobar Council
January 15, 2025	Walgett Recreation Reserve	Family Picnic Day	A relaxed picnic day with food stalls, live music and kids' activities.	Walgett Shire Council
February 20, 2025	Cobar Swimming Pool	Beach Party (Poolside)	A poolside party with beach-themed decorations, music and snacks.	Cobar Swimming Pool Committee
March 14, 2025	Koori Aboriginal Knockout Footy Comp	Walgett Footy Oval	Family BBQ and Jumping Castle	Primary Health Network (PHN)
March 20, 2025	Bourke Town Hall	Tax Planning and Preparation for Farmers	Workshop on tax planning, preparation, and understanding deductions for the upcoming financial year.	Bourke Shire Council partner with local accounting firm
May 14, 2025	Online	Succession Strategies for Rural Communities	Online workshop discussing the importance of succession planning and effective strategies for rural families.	Pro-Agtive
June 19, 2025	Bre-Big Fish	BBQ Masters Fish Cooking Competition	A cooking competition to go alongside the Bre-Big Fish	Bre Emergency Services

Date	Location	Event Title	Event Description	Sponsor
July 11, 2025	Brewarrina Weir Park	Baiame's Ngunnhu Festival	A day of rides, games, food stalls, and entertainment for the whole family.	Brewarrina Rural Emergency Services
July 14-18, 2025	Cobar, Brewarrina, Bourke, Walgett,	Barefoot Investor onTour	Workshops to individuals and families with money management	Local Banks and The Barefoot Investor
August 14, 2025	Bourke Sports Complex	Teen Sports Tournament	A day of competitive sports including soccer, basketball, and volleyball for teens.	Local Schools
September 11, 2025	Walgett Wine Bar	Adults' Wine and Cheese Evening	A sophisticated evening of wine tasting and cheese pairing.	Pub
September 18, 2025	Walgett High School	Money Matters for Kids	Fun and interactive session for kids to learn the basics of money management, saving, and budgeting.	Walgett Shire Schools and TAFE
October 16, 2025	Bourke Community Hall	Effective Tracking of Farm Finances	Workshop on tracking income and expenses, managing cash flow, and financial planning for farms.	Rural Financial Counselling Service NSW
November 20, 2025	Brewarrina Town Hall	Teen Talent Show	A talent show for teenagers to showcase their skills and win prizes.	Brewarrina Youth Centre
December 10, 2025	Online	Depreciation: What Farmers Need to Know	Webinar explaining depreciation, its benefits, and how to apply it to farming equipment and infrastructure.	Rural Financial Counselling Service NSW
December 12, 2024	Cobar Civic Centre	Adults' Comedy Night	A night of laughter with performances by renowned comedians.	Cobar Business Network

Date	Location	Event Title	Event Description	Sponsor
January 15, 2026	Walgett, Cobar, Bourke, Brewarrina Swimming Pool	Surf Life Saving Festival	Bring Lifesaving and Water Safety Festival to the local community with prizes	NSW Life Saving and WaterWise and local council
February 19, 2026	Bourke Art Centre	Teen Art Workshop	An art workshop for teenagers to explore their creativity.	Bourke Art Society
March 11, 2026	Brewarrina Pub	Adults' Trivia Night	Another round of engaging trivia for adults with great prizes.	Brewarrina Pub

Date	Location	Event Title	Event Description	Sponsor
March 18, 2026	Online	Grazing for Profit and Budgeting FY2026	Workshop to help farmers prepare for the end of the financial year, focusing on maximising Returns from livestock enterprises and pasture utilisation and impact on budgeting	Brewarrina Shire Council and KLR Marketing
April 16, 2026	Cobar Sports Ground	Family Sports Day	A day of family-friendly sports activities including races and games.	Cobar Sports Club
May 13, 2026	Online	Investment Strategies for Rural Communities	Online session covering investment options and strategies suitable for rural families and businesses.	Rural Financial Counselling Service NSW
June 17, 2026	Bourke Community Hall	Drag Adults' Bingo Night	A fun bingo night with prizes and refreshments.	Bourke Senior Citizens Club
July 14, 2026	Cobar Civic Centre	Managing Debt and Understanding Credit	Workshop to help individuals manage debt, understand credit scores, and improve financial health.	Local Banks
July 15, 2026	Brewarrina Open Garden Day	Community Gardening Day	A day dedicated to community gardening and health awareness.	Brewarrina Garden Club and Hospital Auxiliary
August 19, 2026	Cobar Skate Park	Teen Skateboarding Competition	A competition for teenagers to showcase their skateboarding skills.	Cobar Youth and Community Centre
September 9, 2026	Walgett Music Hall	Adults' Live Music Night	An evening of live music by local bands and musicians.	Walgett Music Society
September 16, 2026	Walgett High School	Smart Savings for Kids	Interactive workshop teaching kids about the importance of saving and how to set financial goals.	Walgett Shire Schools and TAFE NSW

Date	Location	Event Title	Event Description	Sponsor
October 15, 2026	Bourke Community Hall	Budgeting and Cash Flow Management for Farmers	Workshop on creating effective budgets and managing cash flow for agricultural businesses.	Rural Financial Counselling Service NSW
October 30, 2026	Bourke Community Centre	Family Halloween Party	A spooky and fun Halloween party with costumes, games, and treats.	Bourke Retailers Association
November 18, 2026	Brewarrina Dance Hall	Teen Dance Competition	A dance competition for teenagers with exciting prizes.	Brewarrina Dance Academy
December 9, 2026	Walgett	Grants and Community Loans – a grant writing workshop	1 day grant writing workshop	RIC or RAA
December 10, 2026	Cobar Town Square	Adults' Christmas Market	A festive Christmas market with stalls, food, and holiday music.	Cobar Business Association
February 24, 2027	Bourke High School	Teen Science Fair	A science fair for teenagers to present their projects and innovations.	NSW Education
March 17, 2027	Brewarrina Town Hall	Long-Term Financial Planning for Farmers	Workshop on long-term financial planning, retirement, and succession planning for farms.	Brewarrina Shire Council
May 11, 2027	Online	Using Financial Tools and Apps for Better Management	Online session introducing useful financial tools and apps to help manage finances efficiently.	Rural Financial Counselling Service NSW

Figure 70 – Stronger Communities Program - Events

Responsiveness to Future Scenarios and Uncertainties

An analysis of the impact of potential future scenarios and uncertainties on the implementation and delivery of each project follows.

Future Scenario	Effect on Intended Project Outcomes	Changes to Project Implementation or Delivery for Prevention
Aging Population	Increased demand for social and healthcare services could divert attention from community cohesion activities. Higher participation in events but with a need for age-appropriate activities.	Tailor community events to cater to an older demographic while ensuring inclusivity for all ages. Provide accessible transport to events for elderly participants.
Climate Change	Extreme weather events could disrupt scheduled community events and activities. Increased stress on communities may heighten the need for mental health support.	Develop contingency plans for event rescheduling and relocation. Integrate climate resilience education and resources into community programs.
Digital Divide	Limited access to digital tools and internet could hinder virtual community engagement and access to online resources. Difficulty in promoting events and programs digitally.	Establish community tech hubs with free internet access and digital training sessions. Utilise traditional media and local networks to promote events.
Economic Decline	Lower economic activity could reduce sponsorship and funding for community events. Higher unemployment may limit community participation. Reduced income from agriculture could lower financial contributions to community programs. Economic stress on farmers may decrease their participation in community events.	Offer free or low-cost community events to encourage participation. Develop economic resilience programs that include job fairs and skills workshops. Integrate agricultural support sessions into community events to provide direct assistance.
Health Crises	Increased health concerns could reduce attendance at community events. Higher demand for health services may limit resources for community engagement and reduce capacity of healthcare workers to offer support or attend the events.	Implement health and safety protocols at all events, including provisions for social distancing and hygiene. Partner with health organisations to deliver health services at community events. Incorporate special events with specialists that are not able to be accessed in the region typically.

Future Scenario	Effect on Intended Project Outcomes	Changes to Project Implementation or Delivery for Prevention
Housing Shortages and Poor Quality	Housing instability could lead to decreased community cohesion and event participation. Higher population density in certain areas may strain event resources.	Provide housing support information and resources at community events. Plan events in various locations to distribute participation evenly and manage resources effectively.
Increased Frequency of Floods	Flooding could disrupt access to event locations and displace community members. Potential loss of event equipment and resources.	Schedule events in flood-safe locations and create portable event setups.
Infrastructure Damage	Damage to community infrastructure could prevent events from taking place, reducing opportunities for social cohesion. Increased costs for repairs may divert funds from community programs.	Prioritise maintenance and upgrades of key community infrastructure. Establish emergency funds to quickly repair and restore damaged infrastructure.
Outmigration	Reduced population could lower participation in community events, affecting their success and impact. Fewer volunteers available for program support.	Implement outreach programs to attract and retain residents. Develop partnerships with local organisations to ensure continuous volunteer support.
Policy Shift	Changes in policy could affect funding and regulatory support for community programs. New regulations may require adjustments to event planning and execution. Altered social policies could impact community engagement and support.	Engage with policymakers to ensure alignment with new policies and secure support. Adapt event plans to comply with new regulations. Enhance community outreach to ensure continued engagement and support despite policy shifts.
Water Quality Degradation and Shortages	Stress on water resources could limit the availability of amenities for events. Economic impacts on agriculture could reduce funding for community initiatives.	Diversify funding sources to include grants and private donations to sustain community programs.

Figure 71: - Analysis of the impact of potential future scenarios and uncertainties

Monitoring, Evaluation and Learning – Pillar Implementation

Success measures and indicators that might be used by the Project Steering / Control Group for the project to measure the extent of progress towards the outcomes expressed in the program logic and delivery of the project follow.

Pillar 1: Planning and Monitoring

- *Comprehensive Needs Assessment:* Conduct regular assessments to identify the social, economic, and mental health needs of the community, particularly during drought conditions.
- *Data Collection and Analysis:* Develop a robust system for collecting and analysing data on community well-being, participation in events, and the effectiveness of interventions.
- *Stakeholder Involvement:* Engage with key demographic groups, including First Nations people, young families, and the youth, to gather insights and ensure their needs are addressed in resilience planning.
- *Regular Reporting:* Publish regular reports on the state of community cohesion, well-being, and the impact of the program, ensuring transparency and accountability.
- *Event Scheduling and Coordination:* Plan and schedule community events in coordination with existing regional events to maximise participation and impact.
- *Resource Allocation Monitoring:* Monitor and adjust resource allocation to ensure that support is provided where it is most needed, especially during times of increased stress.

Pillar 2: Responding to Drought Events

- *Emergency Support Services:* Establish a network of support services to provide immediate assistance to community members, during drought events, including mental health counselling and financial advice.
- *Regular Social Events:* Organise regular social events that provide a respite from the stress of drought, fostering social connectivity and community support.
- *Financial Resilience Sessions:* Conduct sessions on financial literacy, government assistance, debt mediation, and business diversification to help individuals and businesses manage their finances during droughts.
- *Volunteer Support Programs:* Develop programs to support volunteers and community leaders, ensuring they have the resources and assistance needed to continue their work during challenging times.
- *Enhanced Communication Channels:* Improve communication channels to ensure community members are aware of available support and resources during drought events.
- *Collaboration with Local Services:* Partner with local health, education and financial services to provide integrated support during drought periods.

Pillar 3: Building Future Resilience

- *Educational Programs:* Implement educational programs focused on building long-term resilience, including sustainable farming practices, mental health awareness, and financial planning.
- *Community Resource Hubs:* Expand community resources to serve as innovation hubs for developing and sharing drought resilience solutions.
- *Youth Engagement Initiatives:* Develop targeted initiatives to engage youth in community activities and resilience building, ensuring the next generation is prepared to face future challenges.
- *Economic Diversification Strategies:* Promote and support economic diversification to reduce reliance on agriculture, encouraging the development of tourism, local crafts, and other industries.
- *Infrastructure Development:* Invest in infrastructure that supports social cohesion and community resilience, such as sports facilities, community centres, and communication networks.
- *Policy Advocacy:* Advocate for policies that support sustainable community development and provide funding for resilience-building projects.
- *Community Training Programs:* Offer training programs for community members on leadership, project management, and resilience planning to build local capacity.

Monitoring Against Objectives

The applicable objectives of the Future Drought Fund Agreement, and relevant project level indicators to track outcomes and how the project is contributing to drought resilience outcomes follow.

Objective 1: Develop the agricultural sector's self-reliance and economic performance.

1. Agricultural Industry Attendance at Financial Resilience Sessions: 70% of local farmers attending at least 50% of financial resilience sessions each year.
2. Adoption of Diversified Income Sources: 40% of farmers adopting at least one alternative income source (e.g. agritourism, value-added products) within three years of project initiation.
3. Reduction in Farm Debt – 25% reduction in average farm debt levels within five years due to improved financial planning and resilience strategies.
4. Increase in Use of Sustainable Farming Practices: 30% increase in the use of sustainable farming practices among local farmers within three years.
5. Farmer Confidence in Financial Planning – Improved confidence in financial planning and management among farmers, assessed through discussions and biannual drought resilience program survey.
6. Engagement with Support Services – High levels of engagement with financial counselling and support services, assessed through service usage statistics and feedback.

Objective 2: Strengthen the social capital and wellbeing of the communities.

1. Increase in Participation in Community Events – 60% increase in participation rates at community events and social gatherings within three years.

2. Reduction in Reported Cases of Social Isolation – 30% reduction in reported cases of social isolation and loneliness within the community within five years.
3. Volunteer Engagement – 40% increase in the number of active community volunteers within three years, highlighting improved social connectivity.
4. Access to Support Services – 90% of residents reporting having access to at least one community support network or service within two years.
5. Community Wellbeing and Cohesion – Improved community wellbeing and cohesion, assessed through regular surveys and focus groups.
6. Quality of Life Improvements – Perceived improvements in quality of life among residents, assessed through biannual drought resilience survey.

Sustainable Recreation & Tourism Strategy

Project Description

Develop and implement a tourism strategy:

- That focuses on sustainable recreational access to regional destinations such as rivers and marshes, with a special emphasis on adapting to drought conditions.
- Tailored for the Three Rivers and Macquarie Marshes (inspired by successful models like the Darling River Run) regions.
- To implement infrastructure for the sustainable management of tourist facilities and explore agri-tourism to diversify economic opportunities.

The strategy will facilitate the creation of recreational infrastructure that can adjust to fluctuating water levels and promote activities suitable for dry seasons.

The initiative aims to boost local economies, particularly in areas where recreational access is limited due to variable climate conditions, such as frequent droughts.

It will support local entrepreneurship through tourism-related businesses such as Airbnbs and Farm Stays and include town planning strategies to enhance attractiveness to visitors.

Scope

The scope of the 'sustainable recreation and tourism strategy' includes:

- Development of a tourism strategy.
- Development of a framework and mechanisms to support local entrepreneurship for tourism related businesses (such as Airbnbs and Farm Stays).
- Development of infrastructure (facilities / support arrangements) to support the management and sustainability of tourism and recreational facilities.

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Pathway to implementation

The pathway to the delivery of the initiative includes:

1. Development of a draft tourism strategy.
2. Review of town planning strategies and identification of policy and regulatory constraints.
3. Development of a framework and support arrangements for local entrepreneurship in tourism-related businesses.
4. Amendments to regulatory and policy town planning Implementation of town planning strategies to enhance town attractiveness for visitors.
5. Detailed design and cost estimates for infrastructure projects for the sustainable management of tourist and recreational facilities.
6. Business Case development and regulatory approvals.
7. Tender for construction or implementation of support arrangements (as required).

Supporting Broader Resilience

The 'sustainable recreation and tourism strategy' will contribute to improving drought resilience of the Far Northwest Region through:

- Maintaining the existing system of the local economy during times of drought.
- Modifying the town planning strategies to enhance tourist visitation.

Additionally, the relevance of the project to improving the resilience of the region to identified challenges follows.

Challenge	Sustainable Recreation & Tourism Strategy Relevance
Economic Dependence on Agriculture	The strategy aims to diversify the local economy by introducing alternative income streams through tourism, which is less dependent on seasonal variability than agriculture. This helps mitigate economic risks associated with farming during drought periods.
Impact of Drought on Agriculture	Tourism provides an alternative economic activity that can continue during drought when agricultural productivity declines. This helps maintain cash flow and employment in the community, reducing the severe economic impacts of drought on farming.
Reduced Local Spending and Employment	By promoting tourism, the strategy can stimulate local spending and create jobs, counteracting the economic downturn caused by drought. This includes supporting small businesses and encouraging new ventures in the tourism sector.

FAR NORTH WEST JOINT ORGANISATION

Challenge	Sustainable Recreation & Tourism Strategy Relevance
Social Isolation and Community Well-being	Tourism fosters greater community engagement and well-being by providing recreational opportunities and events that bring people together, countering the social isolation often experienced during tough economic times like droughts.
Environmental Degradation	Sustainable tourism practices emphasise the preservation and careful management of natural resources, which is important during drought conditions. This can lead to improved environmental stewardship and resilience against future ecological challenges.
Volunteer Fatigue and Reduced Community Services	Tourism can help revitalise community spirit and increase the number of visitors and residents who can contribute to community services and volunteer efforts, thus alleviating the strain on the remaining local population during challenging times.
Infrastructure Strain and Water Management	Part of the tourism strategy includes developing infrastructure that is resilient to drought, such as water-efficient facilities and services. This not only supports tourism but also improves the overall community's resilience in managing scarce resources.
Psychological Impact of Drought	Tourism and recreational activities can improve mental health by providing escape and relaxation opportunities for residents, mitigating the psychological toll of enduring drought conditions and economic uncertainty.

Figure 72: Analysis of Resilience Challenges associated with the project

The projects support the pillars of drought resilience as follows:

Pillar 1: Planning and Monitoring	Pillar 2: Responding to Drought Events	Pillar 3 Building Future Resilience
•Conduct destination management planning that accounts for drought scenarios and promotes sustainable recreational access. •Gather data and coordinate resources to improve community and regional planning for building drought resilience in tourism.	•Implement tourism strategies that allow for continued visitation and recreational activities during drought conditions, mitigating economic impacts. •Facilitate workshops to develop community-led tourism initiatives that adapt to and manage the challenges presented by drought.	•Support small-scale infrastructure projects that enhance the sustainability and appeal of tourist facilities, considering future drought scenarios. •Encourage community leadership and entrepreneurship in developing drought-resilient tourism and recreational activities.

Figure 73 - Drought Resilience, Adaption and Management Model Pillars - Sustainable Recreation & Tourism Strategy

Timeline

Figure 74 - Timeline – Sustainable Recreation & Tourism Strategy

Budget

Preliminary budgets will be determined following the planning phase and are anticipated to encompass strategy development, workshop execution, infrastructure enhancement, and promotional activities.
Accordingly, an economic analysis for this strategy has not been able to be completed within this plan.

Governance Structure

The 'owner' of the initiative, and therefore the Chair of the Steering Committee for each project within the initiative will be at the discretion of the Far Northwest Joint Organisation and the respective Council within the region.
Governance Structure for the project would comprise the following:

Figure 75 – Governance Structure – Sustainable Recreation & Tourism Strategy

- Steering Committee: responsible for strategic direction, oversight, decision-making, and ensuring that the project aligns with funding program.
- The supporting organisations will be involved in contributing to the design, construct and management of the strategy.

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A proposed adaptive framework for monitoring and updating the project / initiative follows.

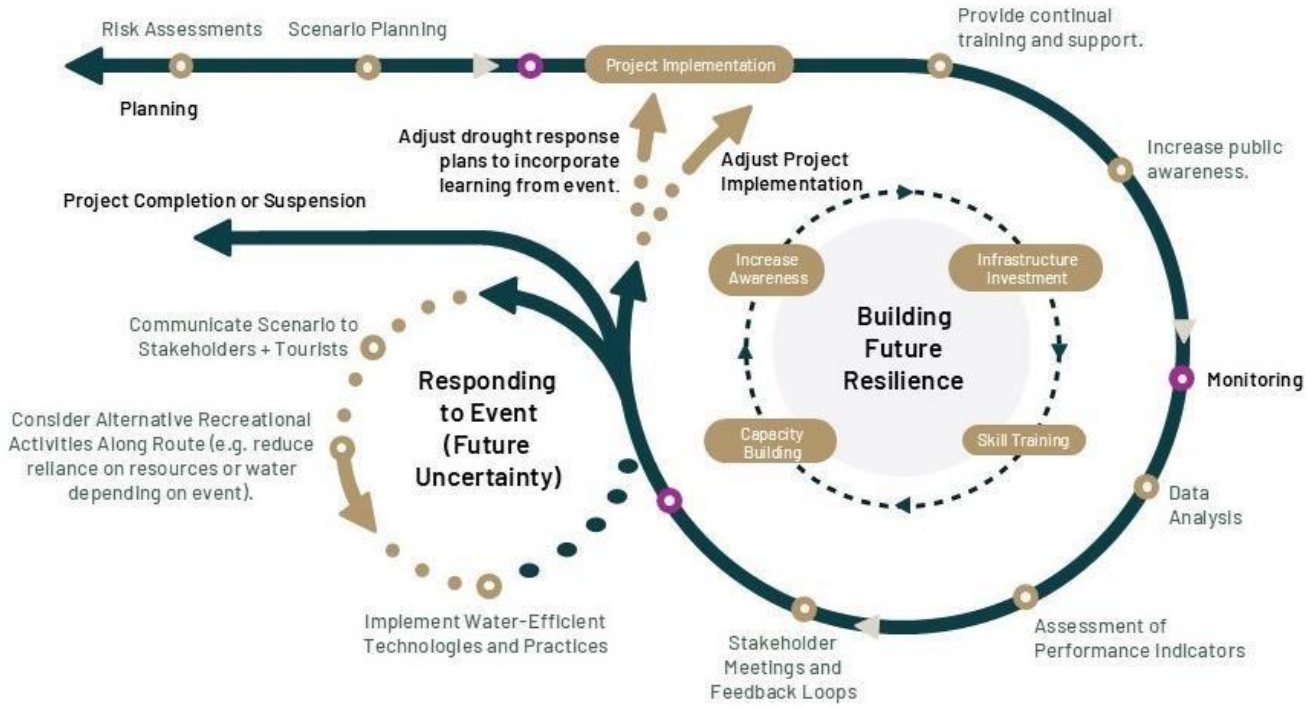

Figure 76: Framework for monitoring and updating the Sustainable Tourism and Recreation Strategy (TSG 2024).

Three Rivers and Macquarie Marshes Run

The Route:

Day	Route	Stops
1		Walgett
2	Walgett to Coonamble	Follow the Castlereagh River, stopping via: • 'Burrima' Boardwalk in Upper Macquarie Marshes • Quambone – Marsh Meanders Kayaking Coonamble Outback Arts Gallery
3	Coonamble to Warren	Gulargambone – Stop to see the iconic Two Eight Two Eight Cultural and Community Hub Warren – Window on the Wetlands Centre and Oxley Park
4	Warren to Nyngan	Roundtrip from Warren to Macquarie Marshes Nature Reserve. Gin Gin Weir Trangie – Explore the Trangie Agricultural Research Centre Nyngan – Nyngan Museum and Mid-State Shearing Shed
5	Nyngan to Cobar	Travel along the Bogan River Cobar – Discover the mining heritage at the Great Cobar Heritage Centre and Fort Bourke Hill Lookout.
6	Cobar to Bourke	Cobar Regional Park Mount Grenfell Historic Site – Explore the indigenous rock art site near Cobar Bourke – Visit the Back O'Bourke Exhibition Centre and take a paddleboat cruise on the Darling River.
7	Bourke to Walgett	Brewarrina – Aboriginal Fish Traps

Figure 77 - Three Rivers and Macquarie Marshes Run Route (Table)

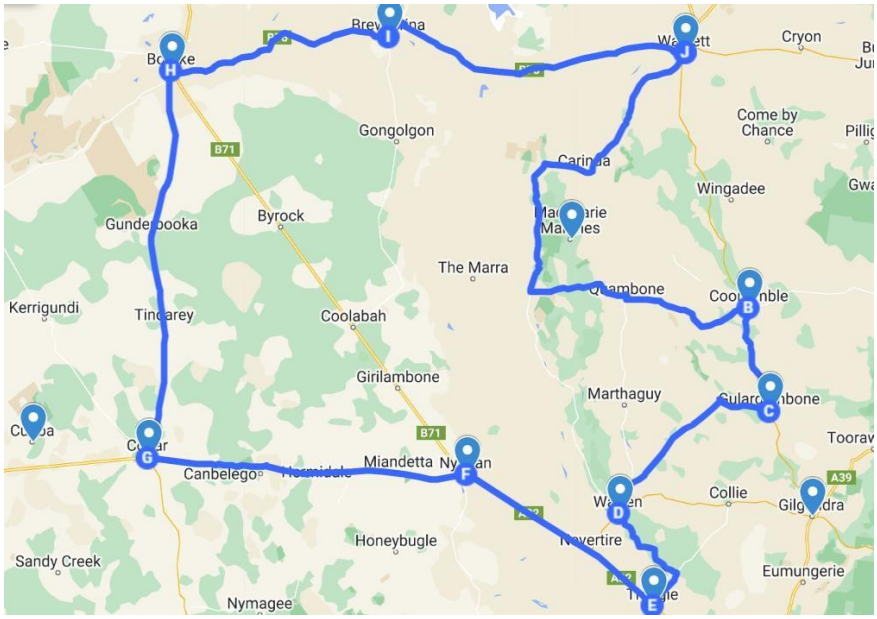

Figure 78 - Three Rivers and Macquarie Marshes Run Route

The Natural Highlights on Route include:

- Macquarie Marshes
- Macquarie Valley trails
- Pilliga Forest
- Mount Grenfell Historic Site *Nominal Costs:*

Phase 1 – Nominal Capital Costs	2023-24	2024-25	2025-26	Total
Nominally:	Year 0	Year 1	Year 2	
Capital Costs				
Project & Operations Manager - Tourism (0.5 FTE of Grade 7 equivalent)	$34,072			$34,072
Webspace (content, purchase-to-pay, design, hosting, payment service, maintenance contract)	$15,000			$15,000
Computer and Software (Microsoft licenses, CANVA)	$4,200			$4,200
Graphic Design and Brand Logos	$2,000			$2,000
Printing (brochures, fact sheets, information booklets, etc)	$1,500			$1,500
Route Signage	$3,300			$3,300
Outdoor displays – construction and design (total 8 signs across main locations – overnight stay locations or stops – Walgett, Coonamble, Gulargambone, Warren, Nyngan, Cobar, Bourke, Brewarrina)	$16,000			$16,000
Content – 50 hours at $100 per hour	$5,000			$5,000
Phase 1 – Nominal Capital Costs	**2023-24**	**2024-25**	**2025-26**	**Total**
Nominally:	Year 0	Year 1	Year 2	
Nominal Capital Investment	$81,072			$81,072
Contingency (10%)	$8,107			$8,107
Nominal Total Capital Investment	**$89,179**			**$89,179**

Figure 79 - Three Rivers and Macquarie Marshes Run Route (Indicative Investment)

Outcomes Achieved from the Three Rivers and Macquarie Marshes Run:

Category	Derived Benefits
Economic Growth and Job Creation	• Increased tourism and subsequent spending in the region (accommodation, food, fuel, services). • Increased demand for services subsequently increases jobs in hospitality, tourism and retail. • Opportunities for business diversification for sustainable operation – tour guides, agritourism, AirBnBs, cultural tours, etc.
Infrastructure Development	• Increased regional investment to improve roads, signage, rest stops and other infrastructure to support access to the regions.
Environmental Conservation	• Encouraging sustainable tourism practices can lead to the preservation of natural habitats and wildlife. • Increased awareness and education about the importance of conservation. • Preservation and promotion of cultural heritage sites, indigenous art, and historical landmarks.
Regional Additions	• Tourism Infrastructure – Development of visitor centres, information kiosks, and interactive maps to guide tourists through the route. • Outdoor Activities – Development of outdoor recreational activities such as hiking trails, birdwatching tours, camping sites and water sports along the rivers.
Opportunities for Regional Council Revenue	• Entry Fees – Charging entry fees for access to certain sites on Council land. • Collaborate with private businesses to develop tourism infrastructure, such as hotels, restaurants, and recreational facilities. • Tourist Services – Offering services such as guided tours, shuttle services, and equipment rentals, either directly or through partnerships with local businesses. • Ticketed events and festivals to increase visitation. • Tour Packages – Collaboration with travel agencies to create packages that include multiple attraction and services within the region. • Government Grants – State and Federal grants aimed at tourism development, infrastructure improvement, and cultural preservation. • Development Funds – Setting up tourism development funds that attract investment from stakeholders interested in the region's growth. These funds can be utilised to support investment in water security infrastructure e.g. bores, off-river storage, etc.

Figure 80 - Three Rivers and Macquarie Marshes Run Route (Outcomes)

Responsiveness to Future Scenarios and Uncertainties

An analysis of the impact of potential future scenarios and uncertainties on the implementation and delivery of each project follows.

Future Scenario	Effect on Intended Project Outcomes	Changes to Project Implementation or Delivery for Prevention
Aging Population	Increased demand for age-friendly recreational activities and amenities. Higher participation in events but with a need for accessibility considerations.	Ensure infrastructure and activities are designed to be accessible for older adults. Develop specialised tours and recreational programs catering to senior visitors. Utilise age of residents to provide historical cultural experiences of the region.
Climate Change	Extreme weather events could disrupt tourism activities and damage infrastructure. Variability in water levels may affect water-based activities.	Implement adaptive infrastructure that can withstand extreme weather and fluctuating water levels. Promote off-season tourism and activities that are less dependent on weather conditions.
Digital Divide	Limited digital connectivity could hinder online promotion and sales for tourism activities. Challenges in utilising digital tools for managing tourism operations.	Invest in improving digital infrastructure and providing training for local businesses. Use traditional marketing methods to complement online strategies and reach a broader audience. Have a region-based site that is centrally managed to support the online booking system for all businesses and accommodation and service providers.
Economic Decline	Reduced disposable income could lower spending on tourism and recreational activities. Higher unemployment may limit local support for tourism initiatives. Reduced income from agriculture could lower investment in agri-tourism initiatives.	Offer affordable tourism packages and discounts to attract budget-conscious travellers. Create job opportunities within the tourism sector to stimulate the local economy. Diversify tourism offerings to include cultural and historical tours, reducing reliance on agri-tourism.
Health Crises	Increased health concerns could deter travel and participation in group activities. Higher demand for health and safety measures at tourist sites.	Partner with healthcare providers to ensure the availability of medical support for tourists.
Housing Shortages	Lack of accommodation options could limit the region's ability to host visitors.	Encourage the development of diverse accommodation options, including ecofriendly and budget-friendly lodgings.
Increased Frequency of Floods	Flooding could damage tourist sites and disrupt travel plans, affecting visitor experiences. Potential loss of infrastructure and natural attractions.	Develop flood-resistant infrastructure and create flood diversion systems.
Infrastructure Damage	Damage to roads, trails, and facilities could limit access to tourist sites, reducing visitor numbers. Increased repair costs may divert funds from promotional activities.	Prioritise the development of resilient infrastructure with regular maintenance schedules. Establish contingency funds for quick repairs to minimise disruption.

Future Scenario	Effect on Intended Project Outcomes	Changes to Project Implementation or Delivery for Prevention
Outmigration	Reduced local population could lower visitor numbers and participation in tourism activities. Fewer local businesses to support tourism infrastructure.	Develop targeted marketing campaigns to attract visitors from outside the region. Provide incentives for local businesses to engage in tourism-related activities.
Policy Shift	Changes in policy could affect funding and regulatory support for tourism development.	Engage with policymakers to ensure alignment with tourism development goals and secure support. Adapt project plans to comply with new environmental and economic regulations.
	New environmental regulations may impose additional costs and operational adjustments. Altered economic policies could impact tourism planning and investment. Shifts in social policies may influence community engagement and support for tourism initiatives.	Allocate contingency budgets to address potential compliance costs and adapt to policy changes. Increase community outreach and education to align tourism initiatives with social policies and gain local support.
Water Quality Degradation	Poor water quality could reduce the attractiveness of water-based recreational activities. Limited water availability may affect the maintenance of tourism facilities.	Develop and promote land-based recreational activities to reduce dependency on water bodies. Implement water conservation measures and sustainable water management practices for tourism facilities.

Figure 81: - Analysis of the impact of potential future scenarios and uncertainties

Monitoring, Evaluation and Learning – Pillar Implementation

Success measures and indicators that might be used by the Project Steering / Control Group for the project to measure the extent of progress towards the outcomes expressed in the program logic and delivery of the project follow.

Pillar 1: Planning and Monitoring

- *Detailed Feasibility Studies:* Conduct in-depth feasibility studies to assess the viability and sustainability of proposed tourism activities, ensuring they can withstand drought conditions.
- *Environmental Impact Assessments:* Perform rigorous environmental impact assessments to ensure tourism activities do not harm natural resources and biodiversity.
- *Stakeholder Consultations:* Engage with local stakeholders, including community members, businesses, and environmental groups, to gather insights and ensure the tourism strategy meets local needs and expectations.
- *Regular Monitoring Programs:* Develop and implement regular monitoring programs to track the environmental and economic impacts of tourism activities, making adjustments as needed.
- *Data-Driven Decision Making*: Utilise data collected from monitoring programs to inform strategic decisions and continuously improve the tourism offerings.
- *Transparent Reporting:* Maintain transparency by regularly publishing progress reports and updates on the sustainability and impact of the tourism strategy.

Pillar 2: Responding to Drought Events

- *Adaptive Tourism Infrastructure:* Design and build tourism infrastructure that can adapt to fluctuating water levels and extreme weather conditions, ensuring continuous operation during droughts.
- *Water Efficient Facilities:* Implement water efficient practices and technologies in all tourist facilities to minimise water usage and ensure sustainability during drought periods.
- *Emergency Response Plans:* Develop comprehensive emergency response plans to address disruptions caused by droughts, ensuring the safety and well-being of visitors and local communities.
- *Community Support Systems:* Establish support systems for local businesses and communities to help them cope with the economic impacts of droughts, including financial aid and marketing support.
- *Drought-Resilient Activities*: Promote and develop tourism activities that are less dependent on water resources, such as hiking, cultural tours and wildlife watching.
- *Public Awareness Campaigns*: Conduct public awareness campaigns to educate tourists about drought conditions and encourage responsible behaviour to minimise their impact on local resources.

Pillar 3: Building Future Resilience

- *Diversified Tourism Offerings:* Develop a diverse range of tourism activities and attractions that are resilient to climate variability, reducing dependence on any single type of activity.
- *Sustainable Business Practices:* Encourage and support local businesses in adopting sustainable practices to enhance their resilience to environmental changes and economic fluctuations.
- *Economic Diversification Programs:* Promote economic diversification by supporting agritourism and other innovative tourism-related businesses that provide alternative income streams for local communities.
- *Community Education and Training:* Implement educational programs and training sessions to build community knowledge and skills in sustainable tourism practices and resilience building.
- *Research and Innovation:* Invest in research and innovation to explore new sustainable tourism practices and technologies that can enhance the region's resilience to drought and other environmental challenges.
- *Policy Advocacy and Development:* Advocate for policies that support sustainable tourism development and provide funding for resilience-building projects.
- *Long-Term Funding Strategies:* Develop long-term funding strategies, including publicprivate partnerships and government grants, to ensure sustained investment in tourism infrastructure and services.

Monitoring Against Objectives

The applicable objectives of the Future Drought Fund Agreement, and relevant project level indicators to track outcomes and how the project is contributing to drought resilience outcomes follow.

Objective 1: Develop the agricultural sector's self-reliance and economic performance.

1. Increase in Agri-Tourism Businesses: Establish 20 new agri-tourism businesses (e.g. farm stays, guided tours, etc) across the region, within three years.
2. Revenue Growth from Agri-Tourism: Achieve a 30% increase in revenue from agri-tourism activities within five years.
3. Participation in Agri-Tourism Training Programs: 70% of local farmers participating in agritourism workshops and training programs within two years.
4. Visitor Number to Region Attractions – 40% increase in visitation numbers to activities e.g. farms, markets, cultural sites, etc, within three years.
5. Diversification of Agricultural Products – 50% of participating farms offering diversified products and services (E.g. accommodation, local crafts, cultural excursions) within three years.
6. Perception of Economic Stability – Improved perception of economic stability among local farmers due to additional income from tourism, assessed in biannual drought resilience program survey.
7. Community Engagement in Tourism Activities: High levels of community engagement and participation in tourism activities, assessed through event attendance and feedback.

Objective 2: Strengthen the Social Capital and Wellbeing of the Communities

1. Increase in Community Event Participation – 50% increase in participation rates at community events and social gatherings within three years.
2. Volunteer Engagement in Tourism Projects – 40% increase in the number of volunteers supporting tourism projects and events within three years.
3. Visitor Satisfaction with Community Amenities – Achieve an 80% visitor satisfaction rate with community amenities and services within two years.
4. Effectiveness of Social Programs – Positive feedback from community members on the effectiveness of social programs and events in fostering connectivity, collaboration and support.

FAR NORTH WEST JOINT ORGANISATION

Monitoring, Evaluation and Learning

The following table describes Monitoring, Evaluation and Learning framework for this Plan.

KEY EVALUATION QUESTIONS		
How effectively are the councils integrating drought resilience initiatives into their BAU activities? What measurable progress is being made towards the objectives set within the Initial Resilience Assessments for priority agricultural areas? How are the interventions influencing the community, economic stability, environmental resilience, and infrastructure within the region?		
PROJECTS **Long Term Water Security Projects** **Telecommunications Strategy** **Stronger Communities Program** **Sustainable Recreation and Tourism Strategy**		
IMPLEMENTATION AND MONITORING FRAMEWORK		
PILLAR 1 Pillar and Monitoring	**PILLAR 2 Respond to Drought Conditions**	**PILLAR 3 Building Future Resilience**
Councils will embed the Drought Resilience Logic Map within their strategic planning frameworks to ensure a systematic approach to drought monitoring and early warning system deployment. This tool will guide the assessment of initial situations and the alignment of planning efforts with broader resilience goals.	The monitoring process will focus on the effectiveness of response mechanisms activated during drought alerts. This includes evaluating the support provided to identified vulnerable sectors and groups, ensuring rapid and effective aid	Councils will periodically review and update their strategies to enhance long-term drought resilience based on the feedback and data collected through the Logic Map and other MEL activities. These updates will aim to strengthen the economic, environmental, social, and infrastructural pillars of the region.
Assumptions Underpinning the Implementation of the Plan		
Councils will regularly update and refine MEL processes to align with state and national guidelines.	Stakeholder engagement remains proactive and constructive, ensuring that feedback loops are operational and inform continuous improvement.	Sufficient resources (financial, human, informational) are allocated for the ongoing support of MEL activities.
Key Assumptions Affecting Outputs to 1–2 Year Outcomes		
Early identification and mitigation of drought impacts will stabilize the regional economy and protect vulnerable sectors.	Enhanced infrastructure and community support systems will improve immediate disaster response and recovery capabilities.	Initial community and stakeholder engagement will establish a strong foundation for sustained cooperation and collaboration.
Key Assumptions Affecting Outcomes from 2+ Years		
Long-term planning and regular reassessment of strategies will adapt effectively to changing environmental conditions and emerging economic trends.	Ongoing education and community engagement will elevate the general understanding and proactive management of drought impacts.	Strategic partnerships and investments will continue to evolve, driving innovation and resilience in agricultural practices and broader economic activities.
Continuous Improvement and Reporting		
Progress against the MEL Plan will be reported through regular updates at council meetings and public forums, ensuring transparency and community involvement. (People, Culture, and Community, Economy, Landscape and Natural Environment, Infrastructure and Built Environment)		
Biannual and annual reports will detail the short and long-term impacts of the initiatives, supported by data from the Logic Map and additional quantitative and qualitative metrics.		
Successes and learnings from the pilot year and subsequent phases will inform adjustments in strategies and actions, aligning with the evolving needs of the Northwest region.		
By aligning the Monitoring, Evaluation, and Learning activities with these frameworks, councils will ensure that drought resilience planning is not only integrated into their Business As Usual activities but also dynamically supports the region's ability to manage and adapt to drought conditions effectively.		

Appendices

Appendix 1: Glossary of Key Terms

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 (CSIRO, 2022).
Adaptive capacity	The ability of individuals and groups to adjust and respond to environmental and socioeconomic changes (CSIRO, 2022).
Adaptive governance	Coordinating 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.
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, 2022).
Economic resilience	The ability of the economy to absorb the economic impact of shocks and stressors without changing the economic status or outcomes (CSIRO, 2022).
Environmental resilience	The ability of the natural environment to cope with a diverse range of shocks and stressors while maintaining natural processes and ecosystem services (CSIRO, 2022).
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 (CSIRO, 2022).
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., 2017).
Local knowledge	Local knowledge and First Nations knowledge incorporates elements of lived experience within a landscape, bearing witness to the operation of 2004). Also see general resilience, specified resilience, economic resilience, environmental resilience and social resilience.
Risk	The potential for adverse consequences for human or ecological systems, recognising the diversity of values and objectives associated with such systems (IPCC, 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' (Resilient Sydney, 2018).

FAR NORTH WEST JOINT ORGANISATION

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 (CSIRO, 2022).
Stressor	An event that occurs gradually over a timeframe that causes an adverse effect, e.g., drought (CSIRO, 2022).
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, systems. It includes aspects of people, landscape, culture – how people interact with surroundings and as part of communities and processes.
Resilience	The ability of a system to absorb a disturbance and reorganise so as to maintain the existing functions, structure and feedbacks (Walker et al., 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 (Taylor et al., 2017).
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).
Transform	The process of radically changing or building a new system with different structure, functions, feedbacks 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).
Drought resilience	Means the ability to adapt, reorganise or transform in response to changing temperature, increasing variability and scarcity of rainfall and changed seasonality of rainfall, for improved economic, environmental and social wellbeing (Australian Government Drought Resilience Funding Plan 2020 - 2024).
Public Good	For infrastructure and other capital investment or on-ground works, 'public good' is taken to mean that the project would not otherwise be able to recover costs—for example, utility pricing—and should deliver significant spill-over benefits for society and the economy, well beyond those derived by private beneficiaries (Australian Government Drought Resilience Funding Plan 2020 - 2024).

The following terms are adopted from the NSW Regional Water Strategies - Guide:

Catchment	A natural drainage area, bounded by sloping ground, hills or mountains from which water flows to a low point. Flows within the catchment contribute to surface water sources as well as to groundwater sources.

FAR NORTH WEST JOINT ORGANISATION

Climate variability	Describes the way key climatic elements, such as temperature, rainfall, evaporation, and humidity, differ from the average over time. Variability can be caused by natural or man-made processes.
Environmental water	Water allocated to support environmental outcomes and other public benefits. Environmental water provisions recognise environmental water requirements and are based on environmental, social, and economic considerations, including existing user rights.
Evaporation	The process by which water or another liquid becomes a gas. Water from land areas, bodies of water and all other moist surfaces is absorbed into the atmosphere as a vapour.
Evapotranspiration	The combined effect of evaporation and transpiration.
Floodplain	Flat land bordering a river or stream that is naturally subject to flooding and is made up of alluvium (sand, silt and clay) deposited during floods. Floodplain harvesting is the collection or capture of water flowing across floodplains.
Groundwater	Water located beneath the surface of the ground in the spaces between sediments and in the fractures of rock formations.
Inflows	The amount of water coming into a surface water source or groundwater source.
Stochastic climate datasets	Stochastic climate datasets are extended climate sequences that are synthesised using statistical methods applied to observed data of rainfall and evapotranspiration and can include paleoclimatic data. These extended sequences include a more complete sample of climate variability, part of which describes more severe drought sequences.
Storage	A state-owned dam, weir or other structure which is used to regulate and manage river flows in the catchment. There are also a range of storages owned by local water utilities. Also refers to the water bodies impounded by these structures.
Stormwater	Flow generated from rainfall falling on hard (impervious) surfaces.
Surface water	All water that occurs naturally above ground including rivers, lakes, reservoirs, creeks, wetlands, and estuaries.
Transpiration	The process where plants absorb water through their roots and then evaporate water vapour through pores in their leaves.
Water security	In the context of regional water strategies refers to the acceptable chance of not having town water supplies fail. This requires community and government to have a shared understanding of what is a 'fail event' (for example, no drinking water or unacceptable water quality) and the level of acceptability they will pay for.
Water reliability	Refers to how often an outcome is achieved. It is often considered to be the likelihood, in percentage of years, of receiving full water allocations by the end of a water year for a licence category.

FAR NORTH WEST
JOINT ORGANISATION

Resilient regional centres	Means water users are able to withstand extreme events, such as drought and flood, and/or adapt and respond to changes caused by extreme events.

The following term is adopted from the CSIRO Drought Resilience Planning, Independent Review Guide:

Resilience planning	Resilience planning is about more than developing a plan to improve the state and trajectory of a region. Resilience plans focus on developing the capacities of a system to absorb, adapt, or transform, and to deal with specified stresses or shocks, such as drought, as well as unspecified stresses or shocks.

Appendix 2: References

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FAR NORTH WEST JOINT ORGANISATION

Appendix 3: Background Context and Key Inputs

The background contexts (BC), review of prior strategies, and relevance of Global academic and government strategies and reports considered, in the identification of existing drought initiatives, within NSW, Australia and International regional and rural contexts, for potential implementation within the regions considered in this plan follow.

Background Contexts

1. (BC.1) Australian Government Drought Response, Resilience and Preparedness Plan

On 12 December 2018 the Australian, state and territory governments signed the National Drought Agreement (NDA), replacing the 2013 agreement. The NDA commits the Australian, state and territory governments to develop policies and programs that position farmers to plan for and manage risk; and prepare for, manage and recover from drought. It is in place until 30 June 2024 and will be reviewed approximately two years before expiry.

The Australian Government Drought Response, Resilience and Preparedness Plan, which in effect arises from the NDA:

- Has a prime focus on preparing farm businesses and rural communities to manage drought in pursuit of a prosperous and sustainable future.
- Is supported by the *Future Drought Fund Act 2019*. The:
  - Purpose of the Fund is to enhance the public good by building drought resilience. This means the benefits generated by the funding must be able to be accessed and/or shared by many (public benefits), rather than be captured solely by individual businesses or industries solely for private commercial gain (private benefits). It also means the benefits achievable from the funding should outweigh the costs. ○ Fund has three interconnected strategic priorities and objectives focused economic resilience, environmental resilience and social resilience of communities.

The *Drought Resilience Funding Plan 2020 to 2024* sets out an approach for making arrangements or grants in relation to drought resilience, or entering into agreements in relation to such grants, under the Future Drought Fund. A Monitoring, Evaluation and Learning (MEL) Framework has been developed to outline the rationale, scope and approach for monitoring and evaluating the activities carried out under the Funding Plan, and for the generation and sharing of knowledge gained through funded activities about how to build drought resilience.

The Australian Government, within the October 2022-23 Budget Measures is:

- providing a further $94.5 million over six years from 2022-23 to consolidate the Drought Resilience Funding Plan in place under the Future Drought Fund Act 2019.
- investing $6.6 million over two years from 2022-23 to support work to prepare for future droughts. This includes work to review and revise the National Drought Agreement with the states and territories and the Commonwealth Drought Plan.

The background contexts (BC) considered, in developing a regional profile and identifying the impacts of past and future droughts include:

- (BC.1) Barwon-Darling Valley Annual Surface Water Quality Report
- (BC.2) Bourke Shire Council Drought Management Plan
- (BC.3) Bourke Shire Strategy
- (BC.4) Brewarrina Community Development Plan
- (BC.5) Brewarrina Local Environment Plan
- (BC.6) Brewarrina Shire Council Operational Plan
- (BC.7) Brewarrina Shire Economic Development and Tourism Plan
- (BC.8) Brewarrina Strategic Planning Statement
- (BC.9) Draft Far West Regional Plan
- (BC.10) Far West Climate Change Snapshot
- (BC.11) Far West Enabling Regional Adaptation Report
- (BC.12) Far West Regional Economic Development Strategy – 2023 Update
- (BC.13) Far West Regional Plan (2036)
- (BC.14) Louth Floodplain Risk Management Study and Plan
- (BC.15) Northern Connectivity Update
- (BC.16) Revised Community Strategic Plan Brewarrina Shire 2026
- (BC.17) Walgett Community Drought Documents
- (BC.18) Water and Drought Security Report
- (BC.19) Water Management Plan Chapter 3.7 – Barwon-Darling River
- (BC.20) Western Regional Water Strategy

The background contexts (BC) considered, in the identification of existing drought initiatives, within NSW, Australia and International regional and rural contexts, for potential implementation within the regions considered in this plan, include:

- (BC.21) Australian Government Drought Response Plan
- (BC.22) Baselining Drought – Developing a Baseline Understanding of Farmer and Community Perceptions of Drought
- (BC.23) Building Climate Resilience Through Nature Based Solutions in Europe
- (BC.24) Climate Change in the North-West and Local Land Services Region
- (BC.25) Coordinated Strategic Plan to Advance Desalination for Enhanced Water Security
- (BC.26) Draft Inquiry Report – Government Drought Support
- (BC.27) Enhanced Aquifer Recharge of Stormwater in the United States: State of the Review Science
- (BC.28) EU Strategy on Adaptation to Climate Change
- (BC.29) Far West Enabling Regional Adaptation Report
- (BC.30) Final Report – Support for Drought Affected Communities in NSW
- (BC.31) Interim Report – Support for Drought Affected Communities in NSW
- (BC.32) Macquarie – Castlereagh Regional Water Strategy
- (BC.33) Managing and Preparing for Drought
- (BC.34) Regional Strengths and Infrastructure Gaps Regional Analysis: NSW
- (BC.35) Regional Water Strategy: Western Implementation Plan
- (BC.36) Resilience Strategies for Drought

- (BC.37) Social and Economic Impacts of Drought on Farm Families and Rural Communities
- (BC.38) Strengthening Agricultural Resilience in the Face of Multiple Risks – Resilience to Drought in Australia
- (BC.39) The Role of Conservation Programs in Drought Resilience
- (BC.40) Water Efficiency and Infrastructure Technical Brief

Desktop Review and Strategic Alignment

The review of prior strategies focused on ensuring the alignment of strategic priorities and projects for this Plan, with the Western Regional Water Strategy and the Macquarie Castlereagh Water Strategy. Below are the region-specific documents, plans and reports that were assessed, analysed and incorporated into this Plan.

Strategy [Year]	Region [Organisation]	Description	Assessment of past drought impact?	Links to Regional Water Strategy?	Addresses Regional Characteristics?	Address future shocks or uncertainties?
Barwon-Darling Valley Annual Surface Water Quality Report [2022]	NSW Government - Planning and Environment	Collection, analysis and report of the ambient and surface water quality condition in the BarwonDarling Valley from July 2021 to June 2022.	Yes – Analysis of surface water quality in the Barwon-Darling Valley showed an increase in sites with a “poor” rating coinciding with drought followed by repeated flooding since 2021.	No	Yes – Monitoring sites included Barwon River at Brewarrina and Darling River at Bourke in the Barwon and Upper Darling water quality zones.	Yes – Analyses Surface Water Quality, addresses future uncertainties related to flooding and hypoxic blackwater events, including discussion of management of inflows and monitoring of dissolved oxygen levels throughout the river system.
Bourke Shire Council Drought Management Plan [2006]	The Council of the Shire of Bourke	The Bourke Drought Management Plan meticulously outlines the strategic approach and considerations for addressing water supply challenges in the face of drought or other emergency conditions. Central to the document is the recognition of water carting as a crucial, albeit expensive, response measure, necessitated under extreme circumstances such as the depletion of weir	No	Yes – Describes the Water Supply Strategy for Bourke and North Bourke and the Water Supply Strategy for Villages within Bourke Shire.	Yes – Addresses community water infrastructure, services and requirements, including natural resources and impact on economic sectors.	Yes - Addresses future uncertainties related to climate change, economic transitions, population growth, and infrastructure needs, including the need for water conservation and management strategies.

Strategy [Year]	Region [Organisation]	Description	Assessment of past drought impact?	Links to Regional Water Strategy?	Addresses Regional Characteristics?	Address future shocks or uncertainties?
		pools, failure of Water Treatment Plants (WTPs), or contamination events affecting water quality. It explores the feasibility of sourcing emergency water from alternate river pools as a potentially more cost-effective solution.				
Bourke Shire Strategy [2012]	The Council of the Shire of Bourke	Document provides a description of the physical, social and economic environment of the Shire as well as the planning context. This includes the development pattern, list and analysis of issues facing the region, and a vision for a sustainable future for the Bourke Shire.	Yes – Discusses impact of drought on outmigration, unemployment, economic sectors including a decrease in agriculture and farming.	Yes – Challenges: Reducing water supply risks, protecting water quality in the Darling River and improving quality where possible in water bodies and underground water resources; Priorities: Safe and reliable water supply, to embody the concept of Catchment Management (Western Catchment Action Plan).	Yes – Describes social, economic, and environmental characteristics, including population, location, land use, natural resources, and economic sectors.	Yes - Addresses future uncertainties related to climate change, economic transitions, population growth, and infrastructure needs.
Brewarrina Community Development Plan [2021]	Regional Aid Australia	The Brewarrina Community Development Program, funded by Rural Aid, details the region's characteristics, history, and culture. It identifies community goals based on consultation with the community completed by Rural Aid and the	Yes – Discusses community challenges as a result of the 7year drought period, including decline in population, difficulties attracting and	No – The plan focuses on community impacts and does not directly link to the regional water strategy's challenges or priorities.	Yes – Describes social and economic characteristics, including population, Indigenous history and culture, social networks, institutions, and economic sectors.	No

Strategy [Year]	Region [Organisation]	Description	Assessment of past drought impact?	Links to Regional Water Strategy?	Addresses Regional Characteristics?	Address future shocks or uncertainties?
		Brewarrina Historical Society. The program highlights guiding principles, challenges over the past 20 years, and current regional assets. It also outlines strategies, actions, and activities planned to achieve community aspirations.	retaining skilled staff, unemployment, low income, intergenerational poverty, business loss and lack of water efficiency.			
Brewarrina Local Environmental Plan [2012]	NSW Government - Environmental Planning and Assessment Act	The Plan targets environmental planning for Brewarrina land, aligning with standard instruments per section 33A of the Act. Its goals are multifaceted: to manage Brewarrina's resources by safeguarding agricultural land, natural resources, conservation areas, scenic/recreational areas, and heritage sites; to foster ecologically sustainable development; to secure agriculture's future by broadening the economic base and preventing agricultural land loss; to reduce land use conflicts; to ensure development suits land capability; to offer diverse living options and settlement types; and to protect arterial road	No	No	No	No

Strategy [Year]	Region [Organisation]	Description	Assessment of past drought impact?	Links to Regional Water Strategy?	Addresses Regional Characteristics?	Address future shocks or uncertainties?
		efficiency from adjacent development impacts.				
Brewarrina Shire Council Operational Plan [2023]	Brewarrina Shire Council	The Brewarrina Shire Council Operational Plan for 2023/2024 details the activities and tasks to achieve objectives from the Community Strategic Plan and Delivery Program. It includes progress metrics, responsible parties, and financial information like estimates, policies, and fees, aligning with both the Delivery Program and Operational Plan.	No	No - The plan focuses on community impacts and does not directly link to the regional water strategy's challenges or priorities.	No	No
Brewarrina Shire Economic Development and Tourism Plan [2011]	Blackadder Associates	The EDT Plan aims to promote economic growth and tourism across the Brewarrina Shire, not just benefiting individual enterprises or the town itself but fostering a positive business environment throughout the Shire. Its objectives include identifying unique economic and tourism opportunities, selecting those with the highest success potential, and enhancing community economic sustainability. Blackadder Associates emphasised the importance of focusing on implementing ideas	No	No - The plan focuses on economic and tourism opportunities and does not directly link to the regional water strategy's challenges or priorities.	Yes - Describes social and economic characteristics, including economic sectors, employment, and population.	No

Strategy [Year]	Region [Organisation]	Description	Assessment of past drought impact?	Links to Regional Water Strategy?	Addresses Regional Characteristics?	Address future shocks or uncertainties?
		during consultations with the Council and community, rather than merely generating them.				
Brewarrina Strategic Planning Statement [2020]	Brewarrina Shire Council	The LSPS gives effect to the Far West Regional Plan, implementing the directions and actions at a local level. The LSPS planning priorities, directions and actions provide the rationale for decisions about how we will use our land to achieve the community's broader goals.	Yes – Discusses negative effect the prevailing drought has had on agribusiness and the demographic changes it has influenced.	No – the statement does not directly link to the regional water strategy's challenges or priorities.	Yes – Location, topography, land use, economic activity, population, Indigenous significance, natural ecosystems e.g. Culgoa National Park and the DarlingBarwon River.	Yes – Discusses the need for future development to consider potential for extreme weather events and the need to reduce reliance on non-renewable energy and water consumption.
Central West and Orana Climate Change Snapshot [2014]	Central West and Orana [NSW Government – Office of Environment and Heritage]	The report provides detailed projections on the impacts of climate change in the Central West and Orana regions, focusing on temperature, rainfall, and fire weather changes. This document serves as a critical resource for understanding climate trends and preparing for future conditions.	No	No	Yes – Location, population, natural ecosystems e.g. Macquarie Marshes.	Yes – Climate Projections (temperature, rainfall, fire weather).
Central West and Orana Regional Plan 2036 [2017]	Central West and Orana [NSW Government – Planning and Environment]	The plan outlines the vision, goals, and actions for the Central West and Orana region by 2036, focusing on economic diversification, environmental sustainability, infrastructure	Yes – The plan discusses the impacts of past droughts on agriculture and water resources.	Yes – Challenges: Reducing water supply risks, maintaining and improving river health, supporting a growing regional economy; Priorities: Safe water supply,	Yes – Describes social, economic, and environmental characteristics, including population, land use, natural resources, and economic sectors.	Yes – Addresses future uncertainties related to climate change, economic transitions, population growth, and infrastructure needs.

Strategy [Year]	Region [Organisation]	Description	Assessment of past drought impact?	Links to Regional Water Strategy?	Addresses Regional Characteristics?	Address future shocks or uncertainties?
		development, and community well-being.		natural system resilience.		
Central West and Orana Regional Plan 2041 [2022]	Central West and Orana [NSW Government – Planning and Environment]	The plan provides a strategic framework for the region, focusing on sustainable growth, economic diversification, infrastructure development, and community well-being up to the year 2041.	Yes – Discusses impacts of past droughts on water resources and agriculture.	Yes – Challenges: Reducing water supply risks, supporting a growing regional economy; Priorities: Safe water supply.	Yes – Describes social, economic, and environmental characteristics, including population, land use, natural resources, and economic sectors.	Yes – Addresses future uncertainties related to climate change, economic transitions, population growth, infrastructure needs, and the shift to renewable energy sources.
Draft Far West Regional Plan 2041 [2022]	NSW Government - Planning and Environment	20-year land use plans with a focus on the next 5 years. They are prepared under the Environmental Planning and Assessment Act 1979 (EP&A Act).Since the release of the Far West Regional Plan 2036, amendments to planning legislation elevated the importance of strategic planning at a regional and local level. This planning is essential to managing changes in the population and economy while guiding the development of local strategic planning statements.	Yes – Discusses impact of past droughts on the natural environment, community wellbeing, infrastructure and the economy.	No	Yes - Describes social, economic, and environmental characteristics, including people and communities, environment, and economic sectors.	Yes – Addresses future uncertainties related to climate change, economic transitions, population growth, and infrastructure needs.
Far West Climate Change Snapshot [2014]	NSW Government - Office of Environment and Heritage	Detailed information on the projected climate changes to the Far West region.	No	No	Yes - Location, topography, population, and natural ecosystems.	Yes - Climate Projections (temperature, rainfall, fire weather).
Far West Enabling	NSW Government -	The report seeks to describe factors that	No	Yes - Challenges: Reducing water	Yes – Location, population,	No

Strategy [Year]	Region [Organisation]	Description	Assessment of past drought impact?	Links to Regional Water Strategy?	Addresses Regional Characteristics?	Address future shocks or uncertainties?
Regional Adaptation Report [2017]	Office of Environment and Heritage	participants identified as contributing to sectoral and regional vulnerability, and the consideration of factors that contribute to regions' ability to cope with change, or 'adaptive capacity'.		supply risks, supporting a growing regional economy; Priorities: Safe water supply, improved infrastructure to deliver water, secure regional water supplies.	topography, and economic sectors.	
Far West Regional Economic Development Strategy - 2023 Update [2023]	NSW Government - Department of Regional NSW	This strategy recognises the imperative to face the region's challenges and does this by supporting current strengths, as well as exploring opportunities to give the region the best chance of achieving longterm, permanent, sustainability and vibrancy. The 2023 REDS update builds on the strong foundation created by the 2018 REDS and includes for each FER: updated data and economic analysis, reflecting new data releases and analysis of the impact of key events that have occurred since 2018; discussion of the key opportunities and challenges facing regional NSW and individual communities; and updated strategies and enabling actions to	No	Yes – Challenges: long term water security, reducing water supply risks, supporting a growing regional economy; Priorities: Implement recommendations from the Draft Western Regional Water Strategy to improve the resilience of future flows and storage in the region and develop greater community understanding.	Yes – Location, population, size of the economy, housing, employment, primary and emerging industries.	Yes – Addresses significant events impacting major industries and identifies future strategic opportunities for economic resilience, including strengths and vulnerabilities in mining, energy, health care, agriculture, and tourism.

Strategy [Year]	Region [Organisation]	Description	Assessment of past drought impact?	Links to Regional Water Strategy?	Addresses Regional Characteristics?	Address future shocks or uncertainties?
		guide and support economic development priorities for regional NSW.				
Far West Regional Plan (2036) [2017]	NSW Government - Planning and Environment	Encompasses a vision, goals and actions geared towards delivering greater prosperity in the years ahead for those who live, work and visit the region.	No	No	Yes – economic sectors, topography and land use, population and community demographics.	Yes – Addresses future uncertainties related to climate change, economic transitions, population growth, infrastructure needs, and the shift to renewable energy sources.
Louth Floodplain Risk Management Study and Plan [2020]	Bourke Shire Council	The Floodplain Risk Management Study (FRMS) aimed to evaluate flooding impacts, review Council policies on flood-prone land development, explore management options for affected areas, and create a Floodplain Risk Management Plan (FRMP). The FRMP aims to adjust Council policies for development compatibility with flood risks, establish Flood Planning Levels for different land uses, recommend a works program to lessen flooding's social, environmental, and economic impacts, and	No	Yes – Challenges: floodplain risk management; Priorities: develop a Floodplain Risk Management Plan (FRMP) for the management of flood affected land.	No	No

Strategy [Year]	Region [Organisation]	Description	Assessment of past drought impact?	Links to Regional Water Strategy?	Addresses Regional Characteristics?	Address future shocks or uncertainties?
		outline an implementation program for these measures. Initial steps included gathering flood data and updating flood modeling based on the Rural Flood Study for the Darling River Floodplain. The FRMS concentrated on flooding from the Darling River and local catchment flooding in Louth, incorporating detailed flood behavior analysis.				
Northern Connectivity Event Update [2018]	Commonwealth Environmental Water Office	This Update details the initiatives and actions that were undertaken as part of The Northern Connectivity Event in reponse to several critical environmental and community needs arising from prolonged periods of reduced or ceased water flow in parts of the Murray-Darling Basin, particularly the BarwonDarling river system. This lack of flow had several causes, including extended drought conditions, water extraction for agriculture, and climate variability, which significantly impacted the river's	Yes – Discusses the impact of drought on river flows, causing flows to stop more often and for longer in the Darling between Bourke and Wilcannia. Focuses primarily on the environmental impact and the vulnerability of the endangered native fish community.	Yes – Challenges: To benefit native fish along rivers in the northern MurrayDarling Basin by improving longitudinal connectivity; Priorities: to better manage environmental water across NSW, coordinating the work of State and Commonwealth agencies, enhancing community understanding and engagement.	Yes – Location, topography, natural resources and ecosystems.	Yes – Addresses future uncertainties related to climate change and periods of drought on river flows, primarily for native fish species in the northern MurrayDarling Basin.

Strategy [Year]	Region [Organisation]	Description	Assessment of past drought impact?	Links to Regional Water Strategy?	Addresses Regional Characteristics?	Address future shocks or uncertainties?
		health and the ecosystems it supports.				
NSW Business Chamber Drought Survey [2018]	NSW [NSW Business Chamber]	The survey evaluates the impact of drought on businesses across various regions in NSW, highlighting revenue losses, cash flow issues, staffing reductions, and concerns about business viability. It provides an overview of how different industries and regions are affected by the drought conditions.	Yes – Provides detailed analysis of the impact of the current drought on businesses, including economic and operational challenges.	No – The survey focuses on business impacts and does not directly link to the regional water strategy's challenges or priorities.	Yes – Describes social and economic characteristics, including revenue impact, cash flow challenges, staffing issues, and regional economic weaknesses.	Yes – Addresses future uncertainties related to prolonged drought conditions, economic stability, business viability, and potential need for business closures or scaling back operations.
Regional Water Strategy – MacquarieCastlereagh [2023]	Macquarie – Castlereagh Region [NSW Government – Planning and Environment]	The strategy identifies key water-related challenges in the Macquarie–Castlereagh region and outlines actions to address them, ensuring secure, reliable, and resilient water supplies for regional and remote communities over the next 20 years and beyond.	Yes – The strategy addresses the impacts of past droughts on water availability, agriculture, and community wellbeing.	Yes – The report sets the priorities and challenges in the region relating to water security and drought.	Yes – The strategy describes social, economic, and environmental characteristics of the region, including water use, climate snapshot, and cultural connections to Country.	Yes – The strategy addresses future uncertainties related to climate change, reduced water availability, and the need for climate adaptation for industry and communities.
Revised Community Strategic Plan Brewarrina Shire 2026 [2022]	Brewarrina Shire Council	The Brewarrina Shire Council's Community Strategic Plan, targeting developments up to 2026, outlines key priorities and objectives for the area's social, environmental, economic, and civic leadership future. Emphasising a community-centric	Yes – Addresses challenges and issues related to drought that have influenced the composition of the community's environmental strategies.	Yes – Challenges: Reducing water supply risks, supporting a growing regional economy; Priorities: adequate and safe water supply that is appropriately priced, manage environmentally	Yes – The plan describes social, economic, and environmental characteristics of Brewarrina shire, including roads, infrastructure, population, education, employment.	No

Strategy [Year]	Region [Organisation]	Description	Assessment of past drought impact?	Links to Regional Water Strategy?	Addresses Regional Characteristics?	Address future shocks or uncertainties?
		approach, the plan's implementation and updates fall under the Council's responsibility. Developed through workshops, surveys, and analysis, it represents a collaborative effort involving the Council, state agencies, community groups, and individuals, addressing wide-ranging issues pertinent to the entire community.		responsible drainage works.		
Walgett Community Drought Documents [2015]	NSW Farmers and North West Plains Sustainability Group	In late May 2015, six meetings were held across the Walgett Shire to address the impacts of long-term drought on landholders and business owners. Over 130 attendees participated in discussions led by NSW Farmers and the North West Plains Sustainability Group, focusing on identifying critical issues and seeking practical solutions. These documents detail the challenges, concerns and solutions raised during this consultation.	Yes – Discussion of the impacts of past droughts on water availability, agriculture, economy and community wellbeing.	Yes – The report sets the priorities and challenges in Walgett relating to water security and drought, focusing on agricultural production, local businesses and social and community wellbeing.	Yes - The plan describes social, economic, and environmental characteristics of Walgett Shire, including location, population, employment, land use and regional economic challenges.	Yes - Discusses concerns over future uncertainties related to climate change, economic transitions and infrastructure needs, including the need for water conservation and management strategies.
Water and Drought Security Report	Lower Macquarie Water Utilities Alliance	This plan provides an indepth look at water management strategies for each region within the	Yes – Discusses the issues of water insecurity for irrigation,	Yes – Challenges: minimise transporting water to avoid evacuation of	Yes – Describes water sources, infrastructure for water supply, and	Yes – Addresses future uncertainties related to prolonged periods of drought, including the

Strategy [Year]	Region [Organisation]	Description	Assessment of past drought impact?	Links to Regional Water Strategy?	Addresses Regional Characteristics?	Address future shocks or uncertainties?
		Lower Macquarie Water Utilities Alliance. This includes an overview of the regions, relevant studies and management plans relating to the region's water security, background information on their current supply system, factors affecting their current level of water security, alternative water supplies available and recommendations for improved water security.	mining companies, and communities, including water restrictions.	urban centres and to reduce frequency and severity of water restrictions; Priorities; improving reliability of water supply during extreme drought.	villages of each shire.	need to improve emergency supplies in shires primarily in relation to water infrastructure.
Water Management Plan Chapter 3.7 - Barwon-Darling River [2021]	Commonwealth Environmental Water Office	This document sets out the plans for managing within a multi-year context the Commonwealth environmental water portfolio in the Barwon–Darling River for 2019-20. It outlines water delivery scenarios, carryover potential and trade options, which will inform decisions by the Commonwealth Environmental Water Holder on how to best use the available water to benefit the environment of the Murray–Darling Basin.	Yes – Addresses impact of drought on ecosystem functions and productivity, including the impact of a reduction in extent and quality of drought refuges on aquatic communities in the BarwonDarling river system.	Yes – Challenges: Protect and maintain the condition of natural ecosystems in the BarwonDarling system including vegetation, waterbirds, native fish; Priorities: supporting connectivity along the Barwon and Darling rivers and between the rivers and their floodplains, supporting key ecosystem functions and maintaining both water quality and drought refuge habitat.	Yes – Describes location, environmental conditions and natural ecosystems in the Barwon-Darling river system.	Yes – Addresses future uncertainties related to climate change, prolonged periods of drought, extreme weather conditions and flooding.
Western Enabling	NSW Government –	The report outlines vulnerabilities to climate	Yes – Discusses impacts of past	Yes – Challenges: Climate resilience,	Yes – Describes social, economic,	Yes – Addresses future uncertainties related to

Strategy [Year]	Region [Organisation]	Description	Assessment of past drought impact?	Links to Regional Water Strategy?	Addresses Regional Characteristics?	Address future shocks or uncertainties?
Regional Adaptation – Central West and Orana Region Report [2017]	Office of Environment and Heritage	change in the Central West and Orana region and identifies adaptive strategies to build resilience across various sectors, including agriculture, water management, infrastructure, and community health.	droughts on water resources, agriculture, and community wellbeing.	water security, sustaining regional economies; Priorities: Integrated water management, enhancing adaptive capacity, fostering resilient communities.	and environmental characteristics, including population demographics, land use, natural resources, and economic sectors.	climate change, water availability, economic stability, infrastructure resilience, and community health and well-being.
Western Regional Water Strategy [2022]	NSW Government - Planning and Environment	Identifies the key regional challenges we need to tackle over the coming decades and outlines the actions we will undertake to respond to those challenges. The best and latest climate evidence, along with a wide range of tools and solutions, has been used to chart a progressive journey for water needs over the next 20 years.	Yes – Discusses impact of drought on water connectivity, the health of natural systems, water quality, viability of businesses, and community wellbeing.	Yes – Challenges: Improve water security, quality and flood management for regional towns and communities, enhancing economic prosperity, protecting the environment and improving affordability; Priorities: Deliver and manage water for local communities, improving water access reliability.	Yes - Describes social, economic, and environmental characteristics, including population, land use, towns, climate, natural resources, natural ecosystems and economic sectors.	No

Relevance of Global academic and government strategies and reports

Global academic and government derived strategies and reports were also reviewed, with their relevance assessed against the strategic priorities and objectives identified by regional stakeholders the initial round of consultation for this plan.

Strategy [Year]	Region [Organisation]	Enduring Level of Supply for Regional and Rural Towns	Coordination Across Government levels	Management of Extreme Events	Rural Water Conservation and Efficiency	Access to Additional Water Entitlements or Alternate Measure Utilisation	Improved Water Literacy, Drought Education and Greater Community Engagement	Enhanced Financial Support for Drought Affected Communities	Reduced Skills Shortage for Effective Water Management	Enhanced Understanding and Management of Climate Risk
Relevant to the Strategic Objectives and Priorities of the RDRP (Yes [Y]/ No [N])										
Australian Government Drought Response Plan [2019]	Australia [Australian Government – Department of Agriculture]	Y	N	N	Y	N	Y	Y	N	Y
Baselining Drought Developing a Baseline Understanding of Farmer and Community Perceptions of Drought [2022]	Southern NSW [Southern NSW Innovation Hub – Sustainable Agriculture, Landscapes and Communities]	Information relevant to challenges only.								
Building Climate Resilience Through Nature Based	Europe [Academic Journal – Climate Risk Management]	N	Y	N	N	N	N	N	N	Y

Strategy [Year]	Region [Organisation]	Enduring Level of Supply for Regional and Rural Towns	Coordination Across Government levels	Management of Extreme Events	Rural Water Conservation and Efficiency	Access to Additional Water Entitlements or Alternate Measure Utilisation	Improved Water Literacy, Drought Education and Greater Community Engagement	Enhanced Financial Support for Drought Affected Communities	Reduced Skills Shortage for Effective Water Management	Enhanced Understanding and Management of Climate Risk
Relevant to the Strategic Objectives and Priorities of the RDRP (Yes [Y]/ No [N])										
Solutions in Europe [2022]										
Climate Change in the North-West and Local Land Services Region [2015]	North West Region [NSW Government – Local Land Services North West]	N	N	N	N	N	N	N	N	Y
Coordinated Strategic Plan to Advance Destination for Enhanced Water Security [2019]	US [US National Science and Technology Council]	N	N	N	Y	N	N	N	N	N
Draft Inquiry Report – Government Drought Support [2008]	Australia [Australian Government – Productivity Commission]	N	N	N	N	N	N	Y	N	Y

Strategy [Year]	Region [Organisation]	Enduring Level of Supply for Regional and Rural Towns	Coordination Across Government levels	Management of Extreme Events	Rural Water Conservation and Efficiency	Access to Additional Water Entitlements or Alternate Measure Utilisation	Improved Water Literacy, Drought Education and Greater Community Engagement	Enhanced Financial Support for Drought Affected Communities	Reduced Skills Shortage for Effective Water Management	Enhanced Understanding and Management of Climate Risk
Relevant to the Strategic Objectives and Priorities of the RDRP (Yes [Y]/ No [N])										
Enhanced Aquifer Recharge of Stormwater in the United States: State of the Review Science [2021[	US [US EPA]	N	N	N	N	Y	N	N	N	N
EU Strategy on Adaptation to Climate Change [2021]	Europe [European Commission]	N	N	N	Y	Y	N	N	N	Y
Far West Enabling Regional Adaptation Report [2017]	Far West NSW [NSW Government - Office of Environment and Heritage]	N	N	Y	N	N	N	N	N	Y
Final Report - Support for	NSW [Legislative	N	Y	N	N	N	N	Y	N	N

Strategy [Year]	Region [Organisation]	Enduring Level of Supply for Regional and Rural Towns	Coordination Across Government levels	Management of Extreme Events	Rural Water Conservation and Efficiency	Access to Additional Water Entitlements or Alternate Measure Utilisation	Improved Water Literacy, Drought Education and Greater Community Engagement	Enhanced Financial Support for Drought Affected Communities	Reduced Skills Shortage for Effective Water Management	Enhanced Understanding and Management of Climate Risk
Relevant to the Strategic Objectives and Priorities of the RDRP (Yes [Y]/ No [N])										
Drought Affected Communities in NSW [2021]	Assembly Committee on Investment, Industry and Regional Development]									
Interim Report - Support for Drought Affected Communities in NSW [2020]	NSW [Legislative Assembly Committee on Investment, Industry and Regional Development]	N	N	N	N	N	N	Y	N	N
Macquarie - Castlereagh Regional Water Strategy [2023]	NSW [NSW Government - Department of Planning and Environment]	Y	Y	Y	Y	Y	Y	N	N	N

Strategy [Year]	Region [Organisation]	Enduring Level of Supply for Regional and Rural Towns	Coordination Across Government levels	Management of Extreme Events	Rural Water Conservation and Efficiency	Access to Additional Water Entitlements or Alternate Measure Utilisation	Improved Water Literacy, Drought Education and Greater Community Engagement	Enhanced Financial Support for Drought Affected Communities	Reduced Skills Shortage for Effective Water Management	Enhanced Understanding and Management of Climate Risk
Relevant to the Strategic Objectives and Priorities of the RDRP (Yes [Y]/ No [N])										
Managing and Preparing for Drought [2018]	NSW [NSW Government - Department of Primary Industries]	N	N	N	N	N	Is a literacy resource to aid Regional and Rural Farmers.	N	N	Provides strategies for individual farmers and businesses to manage drought.
Regional Strengths and Infrastructure Gaps Regional Analysis: NSW [2022]	NSW [Australian Government - Infrastructure Australia]	N	N	N	N	N	Y	N	N	N
Regional Water Strategy: Western	Western NSW [NSW Government - Department of Planning	N	Y	Y	Y	N	Y	N	Y	N

Strategy [Year]	Region [Organisation]	Enduring Level of Supply for Regional and Rural Towns	Coordination Across Government levels	Management of Extreme Events	Rural Water Conservation and Efficiency	Access to Additional Water Entitlements or Alternate Measure Utilisation	Improved Water Literacy, Drought Education and Greater Community Engagement	Enhanced Financial Support for Drought Affected Communities	Reduced Skills Shortage for Effective Water Management	Enhanced Understanding and Management of Climate Risk
Relevant to the Strategic Objectives and Priorities of the RDRP (Yes [Y]/ No [N])										
Implementation Plan [2022]	and Environment]									
Resilience Strategies for Drought [2018]	US [Center for Climate and Energy Solutions]	N	N	N	Y	N	N	N	N	N
Social and Economic Impacts of Drought on Farm Families and Rural Communities	Australia [Australian Institute of Family Studies]	Information relevant to challenges only.								
Strengthening Agricultural Resilience in the Face of Multiple Risks - Resilience to Drought in	Australia [Organisation for Economic Co-operation and Development]	N	N	N	Y	N	N	N	N	Y

Strategy [Year]	Region [Organisation]	Enduring Level of Supply for Regional and Rural Towns	Coordination Across Government levels	Management of Extreme Events	Rural Water Conservation and Efficiency	Access to Additional Water Entitlements or Alternate Measure Utilisation	Improved Water Literacy, Drought Education and Greater Community Engagement	Enhanced Financial Support for Drought Affected Communities	Reduced Skills Shortage for Effective Water Management	Enhanced Understanding and Management of Climate Risk
Relevant to the Strategic Objectives and Priorities of the RDRP (Yes [Y]/ No [N])										
Australia [2020]										
The Role of Conservation Programs in Drought Resilience [2013]	US [United States Department of Agriculture]	N	N	N	Y	N	N	N	N	N
Water Efficiency and Infrastructure Technical Brief [2016]	US [US EPA]	N	N	N	Y	N	N	N	N	N

Appendix 4 Long List of Projects

No	Initiative / Project Name	Description (Short)	LGA Key Outcome area	Program Strategic Alignment	Drought Resilience Benefit (Economic, Social, Environmental)	Drought Resilience Pillar (1,2,3)	Funding Source Availability	Implementation Timeframe	Key Stakeholders	Recommended for Shortlist (Yes / No)	Drought Technical Study(s) Required / Priority Actions	Cross Reference to Community Consultation 'Possible Projects' (004)
All												
1	**Government Job Tenure**	Government jobs to be contracted to for min 5 years to provide income security for communities. (People are not "job shopping" and have a commitment to put roots in a community i.e buy a house, become a member of a sporting organisation.)	Economy			(Maintaining aspects of the Region to improve resilience to drought)	Not Applicable	Long Term - Government Policy	NSW and Federal Governments. Councils.	**No**	**Actions required**: 1. Initiate discussions with NSW State Government and Commonwealth Departments. **Supporting Drought Resilience Technical Studies**: Nil	1
2	**Drought Resilience Officers**	Paid advocates / Representative (part time or full time) in the community to identify and access services grants focussed on Drought Resilience and Community building activities	Economic, Social,	To be identified	**Economic** - Initiative would contribute to an off-farm income stream for a person. **Social** - Increased community cohesion. **Environmental** - Not directly identified.	Respond to Drought events (Pillar 2) Build future resilience (Pillar 3) (Maintaining aspects of the Region to improve resilience to drought)	Not identified	12 Months	NSW Government Council(s)	**To be determined**	**Actions required**: 1. Initiate discussions with NSW State Government. 2. Council(s) / Regional Organisation development a position description and fund. **Supporting Drought Resilience Technical Studies**: Nil	1
3	**Tax Incentives / Economic Zone**	Tax incentives / economic zone: 1.A exemptions, incentives to work / live / create businesses in regions that address inadequate infrastructure available in other regions eg – communications, access to energy or alternate energies, access to water 2. re-instate / encourage increase of population – reward those that decide to stay	Economy			(Modifying aspects of the Region to improve resilience to drought)	Not Applicable		Australian Government NSW Government	**No**	**Actions required**: 1. Initiate discussions with NSW State Government and Commonwealth Departments. **Supporting Drought Resilience Technical Studies**: Nil	3

No	Initiative / Project Name	Description (Short)	LGA Key Outcome area	Program Strategic Alignment	Drought Resilience Benefit (Economic, Social, Environmental)	Drought Resilience Pillar (1,2,3)	Funding Source Availability	Implementation Timeframe	Key Stakeholders	Recommended for Shortlist (Yes / No)	Drought Technical Study(s) Required / Priority Actions	Cross Reference to Community Consultation 'Possible Projects' (004)
4	**Water Security Plan**	Develop a regional water security, (including infrastructure) plan for the Walgett, Brewarrina, Bourke and Cobar Shires (To incorporate river and bore water options, and include town, village, stock, industrial, irrigation and domestic usage) (To allow for a strategy / plan to access water for dust suppression and road maintenance to reduce financial burded on Local Government). Note: Bore options, included below at Serial 5.a. (Also conside the plan would need to include a description of the extant water supply systems, secure yield study 5/10/10 rule) actions to be taken during each drought response level, actions that should be taken in preardness for future drought periods).	Economic, Social, Environmental	NSW Future Ready Regions Strategy - Sustainable, secure and healthy water resources	**Economic** - Provides for the continued operation of agriculture and businesses that rely on the supply of water, within the community, to sustain their economic activity. **Social** - Provides a level of confidence to the local community, that there are options for the supply of water to support their business operations. **Environmental** - Supports decision making in managing the impact of bores on the natural environment.	Respond to Drought events (Pillar 2) Build future resilience (Pillar 3) (Modifying aspects of the Region to improve resilience to drought)	Australian Government national Water Grid NSW Regional Growth Fund	Obtain funding to conduct the studies and develop the plan, 6 months. Drought Resilience Technical Studies 6 months Development and finalisation of plan 3 - 6 months	Australian Government national Water Grid NSW Regional Growth Fund Murray River Basin Authority	**Yes**	**Actions required**: 1. Conduct Drought Resilience technical studies. 2. Detailed cost estimate (business case / funding application. 3. Development of the plan. 4. Discussion with stakeholders and community. 5. Finalisation of plan. 6. Identification of business case requirements for subsequent priority initiatives / plans / actions. 7. Progression of business cases / implementation actions. **Supporting Drought Resilience Technical Studies**: 1. Conduct a water demand study aligned to Agriculture and domestic uses. 2. Community consultation to facilitate concept for the plan, prior to detailed development.	5

No	Initiative / Project Name	Description (Short)	LGA Key Outcome area	Program Strategic Alignment	Drought Resilience Benefit (Economic, Social, Environmental)	Drought Resilience Pillar (1,2,3)	Funding Source Availability	Implementation Timeframe	Key Stakeholders	Recommended for Shortlist (Yes / No)	Drought Technical Study(s) Required / Priority Actions	Cross Reference to Community Consultation 'Possible Projects' (004)
5	**Water security - Groundwater**	Increase the number of water bores for stock and domestic use and dust suppression for road maintenance / construction activities. The proving of ground water resources (quality and flow) and installation of standpipes (connected to a supervisory control system to provide a capability for standpipes to be switched on / off, to cross level usage between locations to adjust for changes in quality and flow rates) in up to five locations, to provide greater resilience for the agriculture and town water supplies of local towns.	Economic, Environmental	NSW Future Ready Regions Strategy - Sustainable, secure and healthy water resources	**Economic** - Provides for the continued operation of agriculture and businesses that rely on the supply of water, within the community, to sustain their economic activity. **Social** - Provides a level of confidence to the local community, that there are options for the supply of water to support their business operations. **Environmental** - Supports decision making in managing the impact of bores on the natural environment.	Respond to Drought events (Pillar 2) Build future resilience (Pillar 3) (Modifying aspects of the Region to improve resilience to drought)	NSW Future Drought Fund (for technical studies) Australian Government national Water Grid NSW Regional Growth Fund	Pre-Construction - 16 months Construction 6 months	NSW DPE - Water Agriculture NSW NSW Farmers association Identified Agriculture Industries	**Yes**	**Actions required**: 1. Conduct Drought Resilience technical studies. 2. Detailed design of selected bore locations. 3. Detailed cost estimate. 4. Complete full business case. 5. Funding applications and approvals 6. Tender for construction. **Supporting Drought Resilience Technical Studies**: 1. Conduct a ground water resource study aligned to Agriculture and local use. 2. Prove (drill and assess) bores (quality and flow) in an agreed number of locations (e.g. five). 3. Community consultation.	5
6	**Stronger communities program**	Series of activities of events to promote "support groups" for social cohesion and connectness that Councils support /initiate during periods of droughts Note: If staff required to support - then they are paid for by the Council (reduce load on 'volunteers' to organise, conduct and clean up)	Social	NSW Future Ready Regions Strategy - Stronger communities and diverse regional economies	**Economic** - Initiatives would contribute to an off-farm income stream. **Social** - Increased commmunity cohesion, reduced demand for mental health services. **Environmental** - Not directly identified.	Respond to Drought events (Pillar 2) Build future resilience (Pillar 3) Maintain aspects of the Region to improve resilience to drought)	NSW Regional Growth Fund	2 - 3 Months	Regional NSW	**To be determined**	**Actions required**: 1. In conjuction with Community organisations develop a program of activities. 2. Develop a plan for the conduct of each activity. 3. Deliver the scheduled activities. **Supporting Drought Resilience Technical Studies**: Nil.	7

No	Initiative / Project Name	Description (Short)	LGA Key Outcome area	Program Strategic Alignment	Drought Resilience Benefit (Economic, Social, Environmental)	Drought Resilience Pillar (1,2,3)	Funding Source Availability	Implementation Timeframe	Key Stakeholders	Recommended for Shortlist (Yes / No)	Drought Technical Study(s) Required / Priority Actions	Cross Reference to Community Consultation 'Possible Projects' (004)
7	**Business education workshops – financial management**	Provision of business mentoring to support 'proactive decision making' (livestock trading, decision making based on facts and figures) (Workshops / one-on-one)	Economy	NSW Future Ready Regions Strategy - Stronger primary industries prepared for drought	**Economic** - Improved ability to maintain livestock nutrition **Social** - Improved resilience of farmers in managing through drought. **Environmental** - Not directly identified.	Planning and Monitoring (Pillar 1) Respond to Drought events (Pillar 2) Build future resilience (Pillar 3) (Maintain aspects of the Region to improve resilience to drought)	NSW Department of Agriculture, Fisheries and Forestry	Immediate	Regional NSW NSW Rural Financial Counselling service	**To be determined**	**Actions required**: 1. Identify topics to be covered (e.g. Succession planning Farm budgeting Forecasting and cash flow analysis Farm debt mediation Bank reviews and relationships Help refinancing debt Access government assistance and rural loans Understand farm loan interest rates Understand your financials \Build a business plan Identify areas of risk Benchmarking Referrals Debt relief and negotiation) 2. Develop a schedule. 3. Advertsie program and call for participants. 4. Deliver the program.	8
8	**Telecommunications Security**	Improve telecommunications connectivity (4G and 5G) in the region to support business and agricutlural productivity	Economy		**Economic** - Provides for the continued operation of agriculture and businesses that rely on telecommunications, within the community, to sustain their economic activity. **Social** - Provides a level of confidence to the local community, that there are telecommunications options to support their business operations.	Planning and Monitoring (Pillar 1) Respond to Drought events (Pillar 2) Build future resilience (Pillar 3) (Modifying aspects of the Region to transform and improve resilience to drought)			NSW and Federal Governments. Councils.	**Yes**	**Actions required**: 1. Initiate discussions with NSW State Government and Commonwealth Departments. **Supporting Drought Resilience Technical Studies**: Nil	11

No	Initiative / Project Name	Description (Short)	LGA Key Outcome area	Program Strategic Alignment	Drought Resilience Benefit (Economic, Social, Environmental)	Drought Resilience Pillar (1,2,3)	Funding Source Availability	Implementation Timeframe	Key Stakeholders	Recommended for Shortlist (Yes / No)	Drought Technical Study(s) Required / Priority Actions	Cross Reference to Community Consultation 'Possible Projects' (004)
9	**Water Security Strategy - Barwon / Darling**	Development water security strategy to ensure sustainable water management and availability in the Barwon-Darling catchment area.	Economic, Social, Environmental	NSW Future Ready Regions Strategy - Sustainable, secure and healthy water resources	**Economic** - Provides for the continued operation of agriculture and businesses that rely on the supply of water, within the community, to sustain their economic activity. **Social** - Provides a level of confidence to the local community, that there are options for the supply of water to support their business operations. **Environmental** - Supports decision making in managing the impact of bores on the natural environment.	Respond to Drought events (Pillar 2) Build future resilience (Pillar 3) (Modifying aspects of the Region to improve resilience to drought)	Australian Government national Water Grid NSW Regional Growth Fund	Obtain funding to conduct the studies and develop the plan, 6 months. Drought Resilience Technical Studies, 6 months Development and finalisation of plan 3 - 6 months	Australian Government national Water Grid NSW Regional Growth Fund Murray River Basin Authority	**Yes**	**Actions required**: 1. Conduct Drought Resilience technical studies. 2. Detailed cost estimate (business case / funding application. 3. Development of the plan. 4. Discussion with stakeholders and community. 5. Finalisation of plan. 6. Identification of business case requirements for subsequent priority initiatives / plans / actions. 7. Progression of business cases / implementation actions. **Supporting Drought Resilience Technical Studies**: 1. Conduct a water demand study aligned to Agriculture and domestic uses. 2. Community consultation to facilitate concept for the plan, prior to detailed development.	NA

No	Initiative / Project Name	Description (Short)	LGA Key Outcome area	Program Strategic Alignment	Drought Resilience Benefit (Economic, Social, Environmental)	Drought Resilience Pillar (1,2,3)	Funding Source Availability	Implementation Timeframe	Key Stakeholders	Recommended for Shortlist (Yes / No)	Drought Technical Study(s) Required / Priority Actions	Cross Reference to Community Consultation 'Possible Projects' (004)
10	**Additional Consultation and Community Connection**	Regular consultation focused on the impacts of drought on key demographic groups, including First Nations people, young families, and the youth, to integrate their perspectives and solutions into community development.	Social		**Social** - Increased community cohesion	Planning and Monitoring (Pillar 1) (Modifying aspects of the Region to improve resilience to drought)	NSW Regional Growth Fund	2 - 3 Months	Council(s) First Nations Youth Young Families	**To be determined**	**Actions required:** 1. In conjuction with Community develop a consultation schedule. 2. Develop a plan for the conduct of each consultation. 3. Deliver the engagment log of the consultation. **Supporting Drought Resilience Technical Studies: Nil.**	NA

No	Initiative / Project Name	Description (Short)	LGA Key Outcome area	Program Strategic Alignment	Drought Resilience Benefit (Economic, Social, Environmental)	Drought Resilience Pillar (1,2,3)	Funding Source Availability	Implementation Timeframe	Key Stakeholders	Recommended for Shortlist (Yes / No)	Drought Technical Study(s) Required / Priority Actions	Cross Reference to Community Consultation 'Possible Projects' (004)
11	**Mental Health Awareness in Young Men**	Increase community sporting activities and events, like community BBQs, to enhance social connections, thereby addressing isolation among farmers and improving mental health among young men.	Social		**Social** - Increased commmunity cohesion	Build future resilience (Pillar 3) (Maintaing aspects of the Region to improve resilience to drought)	NSW Regional Growth Fund	2 Months	Community members Local sports clubs Mental health organisations	**To be determined**	**Actions required:** 1. In conjuction with Mental Health Organisations develop program content. 2. Develop a plan to conduct program. 3. Deliver the program. 4. Provide follow-up after the program. **Supporting Drought Resilience Technical Studies: Nil.**	NA

Bourke

No	Initiative / Project Name	Description (Short)	LGA Key Outcome area	Program Strategic Alignment	Drought Resilience Benefit (Economic, Social, Environmental)	Drought Resilience Pillar (1,2,3)	Funding Source Availability	Implementation Timeframe	Key Stakeholders	Recommended for Shortlist (Yes / No)	Drought Technical Study(s) Required / Priority Actions	Cross Reference to Community Consultation 'Possible Projects' (004)
1	**Additional Water Supply for Bourke**	Improve Capacity for Bourke	Economic, Environmental	NSW Future Ready Regions Strategy - Sustainable, secure and healthy water resources	**Economic** - Provides for the continued operation of agriculture and businesses that rely on the supply of water, within the community, to sustain their economic activity. **Social** - Provides a level of confidence to the local community, that there are options for the supply of water to support their business operations. **Environmental** - Supports decision making in managing the impact of water usage on the natural environment.	Respond to Drought events (Pillar 2) Build future resilience (Pillar 3) (Modifying aspects of the Region to improve resilience to drought)	NSW Future Drought Fund (for technical studies) Australian Government national Water Grid NSW Regional Growth Fund NSW Safe and Secure Water program	Pre-Construction - 24 months Construction 12 months	NSW DPE - Water NSW Dams Safety Agriculture NSW NSW Farmers association Australian Government National Water Grid	**To be determined**	**Actions required:** 1. Geotechnical investigation. 2. Conduct Drought Resilience technical studies. 3. Detailed design. 4. Detailed cost estimate. 5. Complete full business case. 6. Funding applications and approvals. 7. Tender for construction. **Supporting Drought Resilience Technical Studies**: 1. Geo-Technical and raw water remediation options study. 2. Community consultation.	26

Cobar

No	Initiative / Project Name	Description (Short)	LGA Key Outcome area	Program Strategic Alignment	Drought Resilience Benefit (Economic, Social, Environmental)	Drought Resilience Pillar (1,2,3)	Funding Source Availability	Implementation Timeframe	Key Stakeholders	Recommended for Shortlist (Yes / No)	Drought Technical Study(s) Required / Priority Actions	Cross Reference to Community Consultation 'Possible Projects' (004)
1	**Water Security Plan**	Develop a regional water security infrastructure plan for the Macquarie River	Economic, Environmental			Respond to Drought events (Pillar 2) Build future resilience (Pillar 3) (Modifying aspects of the Region to improve resilience to drought)	Australian Government national Water Grid NSW Regional Growth Fund		Australian Government national Water Grid NSW Regional Growth Fund Murray River Basin Authority	**To be determined**	**Actions required**: 1. Conduct Drought Resilience technical studies. 2. Detailed cost estimate (business case / funding application. 3. Development of the plan. 4. Discussion with stakeholders and community. 5. Finalisation of plan. 6. Identification of business case requirements for subsequent priority initiatives / plans / actions. 7. Progression of business cases / implementation actions. **Supporting Drought Resilience Technical Studies**: 1. Conduct a water demand study aligned to Agriculture and domestic uses. 2. Community consultation to facilitate concept for the plan, prior to detailed development.	32

No	Initiative / Project Name	Description (Short)	LGA Key Outcome area	Program Strategic Alignment	Drought Resilience Benefit (Economic, Social, Environmental)	Drought Resilience Pillar (1,2,3)	Funding Source Availability	Implementation Timeframe	Key Stakeholders	Recommended for Shortlist (Yes / No)	Drought Technical Study(s) Required / Priority Actions	Cross Reference to Community Consultation 'Possible Projects' (004)
2	**Water Security**	Increase the storage of the Burrendong Dam by an additional 20%	Economic, Environmental	NSW Future Ready Regions Strategy - Sustainable, secure and healthy water resources 2023/2024 Operational Plan & Estimates	**Economic** - Provides for the continued operation of agriculture and businesses that rely on the supply of water, within the community, to sustain their economic activity. **Social** - Provides a level of confidence to the local community, that there are options for the supply of water to support their business operations. **Environmental** - Supports decision making in managing the impact of water usage on the natural environment.	Respond to Drought events (Pillar 2) Build future resilience (Pillar 3) (Transform aspects of the Region to improve resilience to drought)	NSW Future Drought Fund (for technical studies) Australian Government national Water Grid NSW Regional Growth Fund NSW Safe and Secure Water program	Pre-Construction - 36 months Construction 18 months	NSW DPE - Water NSW Dams Safety Agriculture NSW NSW Farmers association Australian Government National Water Grid	**To be determined**	**Actions required:** 1. Geotechnical investigation. 2. Conduct Drought Resilience technical studies. 3. Detailed design. 4. Detailed cost estimate. 5. Complete full business case. 6. Funding applications and approvals. 7. Tender for construction. **Supporting Drought Resilience Technical Studies**: 1. Geo-Technical and raw water remediation options study. 2. Community consultation.	26
3	**Nyngan to Cobar Pipeline Project (Stage 2)**	Albert Priest Channel Improvement and Pipeline Augmentation Project (Nyngan to Cobar Pipeline Project). The project involves upgrading existing water infrastructure between Nyngan and Cobar to provide long-term water supply reliability and involves technical, environmental, and cultural heritage studies.	Economic, Environmental	Final business case developed, with stakeholder and community engagement.	**Economic** - Provides for the continued operation of agriculture and businesses that rely on the supply of water, within the community, to sustain their economic activity. **Social** - Provides a level of confidence to the local community, that there are options for the supply of water to support their business operations. **Environmental** - Supports decision making in managing the impact of water usage on the natural environment.	Respond to Drought events (Pillar 2) Build future resilience (Pillar 3) (Transform aspects of the Region to improve resilience to drought)	$45.5M secured for Stage 1 Australian Government national Water Grid NSW Regional Growth Fund	Stage 1 urgent pump station replacement, Stage 2 pipeline replacement, with final business case due second half of 2023.	NSW DPE - Water Council(s) Industry & Mining Sectors First Nations Local Communities	**To be determined**	**Actions required:** 1. Conduct Drought Resilience technical studies. 2. Detailed design. 3. Detailed cost estimate. 4. Complete full business case. 5. Funding applications and approvals. 6. Tender for construction. **Supporting Drought Resilience Technical Studies**: 1. Community consultation.	NA

Appendix 5: Stakeholder Engagement Plan & Community Consultation Report

SUMMARY

The Regional Drought Resilience Plan is designed to enable local governments and their communities to better prepare for, respond to and recover from drought. Community level drought resilience depends upon strong primary industries and agricultural supply chain sectors, as well as other businesses, community organisations and local government.

The consultation process with the Brewarrina, Bourke, Cobar and Walgett Shires as part of the Regional Drought Resilience Plan (RDRP) was comprehensive, engaging a broad spectrum of the community including local government councils (Brewarrina Shire Council, Bourke Shire Council, Cobar Shire Council and Walgett Shire Council), community members, and various stakeholders such as local organisations and businesses. The engagement was structured around initial assessments, community and council sessions focused on drought resilience, and follow-up meetings to refine strategies and gather additional feedback.

Key themes identified during the consultations in Bourke, Brewarrina, Cobar, and Walgett included water security, with discussions around the impact of weir modifications on water storage and advocacy for differentiated treatment of the Northern River systems compared to others like the Hume. Economic development was emphasized with initiatives to attract and retain residents through tax incentives and financial supports like the RIC Farm Investment Loan and Drought Loan, and a Drought Keeper program to support those losing income due to drought. Community and social cohesion saw suggestions for increased access to clinical psychiatric support and improving digital connectivity for remote areas.

Community and council feedback underscored the challenges of persistent aridity and the exacerbation of these conditions by drought, affecting the economic and social fabric of the region. Water security was notably precarious, with concerns about reduced water storage capacity due to planned weir modifications potentially leading to significant water scarcity as seen during the 2018-2019 drought at Brewarrina and Collarenebri.

Feedback from councils highlighted varying priorities across the region: Brewarrina expressed a critical need to maintain water security and is pursuing research into the socio-economic impacts of water buybacks. Cobar emphasised the importance of infrastructure support for economic and environmental sustainability, while Walgett pointed to the significant need for community projects like road works and infrastructure developments, which could employ local workers during drought periods.

Overall, the consultation process was pivotal in shaping the strategic direction of the RDRP, aligning it with community needs and leveraging local insights to forge effective drought resilience strategies. This approach highlighted a community preference for practical and impactful projects that promise sustainable and resilient community development.

FAR NORTH WEST JOINT ORGANISATION

INTRODUCTION

This report provides the results from an interpretation of the consultations conducted to understand the communities experiences of drought and their insights for enhancing drought resilience.

The aim of the consultations and the subsequent co-design process with community stakeholders is to:

1. Inform the community and stakeholders about the RDRP project;
2. Generate great ideas, solutions, options, opinions and stories;
3. Form relationships with community members who have capacity to champion and lead projects;
4. Understand gaps in prior responses to drought resilience; and
5. Finalise a long list of potential drought resilience projects.

The aim of the consultation and review process with Council stakeholders, including Mayors and General Managers, is to:

1. Understand the services previously delivered by Council during drought to improve drought resilience, and the limitations to their success or reasoning for success;
2. Understand projects currently in development that aim to deliver improvements to drought resilience;
3. Gather feedback on the long list of projects developed through consultation with community members, in relation to projects that have been previously actioned or projects that are missing;
4. Co-prioritise the projects to develop the short list of priority projects for further detail and analysis; and
5. Gather feedback on the overall drought resilience report to ensure that it aligns with Council expectations and visions.

Drought operates cyclically, which means that at any given moment, the community is engaged in preparation, recovery, and adaptation. These phases can be segmented into four main stages: the good period, the uncertain period, the drought period, and the recovery period. While the specific impacts of these stages may differ from one drought to another, the goal is to implement measures, training, and strategies during the good periods. These proactive efforts are designed to lessen the severity and destruction experienced during the uncertain and drought periods, thereby supporting a more rapid and efficient recovery.

Good Period

During periods of average or above average rainfall, the communities in the Northwest Region experience a relative sense of stability. These are the times when agricultural production stabilises, and there is less strain on water resources, allowing the community and businesses to operate under ‘normal’ conditions. However, as emphasised in the consultation, harsh arid conditions are a perennial state and therefore even during ‘normal’ conditions, water efficiency and water saving is still a paramount concern.

FAR NORTH WEST JOINT ORGANISATION

Uncertain Period

During uncertain periods, where growing conditions are below average, there is a heightened sense of anxiety and cautiousness among farmers and businesses. These periods challenge the community to adapt to less predictable conditions, potentially leading to a reduced agricultural output and increased monitoring of resource allocations, especially water and feed for livestock.

Drought Period

During official drought periods, where rainfall is consistently below average, feedback highlighted substantial challenges. The region, being inherently arid, faces acute water shortages that severely impact agricultural productivity and local industries. Consultation responses emphasised the critical nature of water security, with a focus on long-term solutions like dam enhancements and improved water management systems. There was a notable concern regarding the late declaration of drought periods, which often come after businesses and the agricultural sector have already encountered significant hardships.

Recovery Period

In the recovery phase, while rainfall might increase, the community and businesses still face the lingering effects of the drought. Feedback suggested that this period is crucial for rebuilding and planning for future resilience. Initiatives such as the implementation of more sustainable agricultural practices, investments in infrastructure to better manage future droughts, and continued support for affected businesses and communities are vital. The emphasis is on not just returning to pre-drought conditions but improving the overall resilience and sustainability of the region to better withstand future droughts.

INITIAL CONSULTATION – COMMUNITY GROUPS

Consultation Workshops

Town	Male	Female	Under 40	TOTAL
Cobar	8	7	3	15
Euabalong	4	0	1	4
Bourke	6	6	3	12
Louth	6	3	2	9
Brewarrina	7	8	1	15
Hebel	1	4	0	5
Lightning Ridge	4	6	1	10
Walgett	6	6	1	12
Collarenebri	3	2	0	5
Come-By-Chance	1	4	0	5
	46	46		92

In small communities, residents wear many hats to ensure community cohesiveness and activity. This is reflected in the diversity of business interests and community group representation present at the 10 community consultation gatherings across RDRP004 area that included; Local Shire Councillors, NSW Framers Local Councillors, ICPA Members and Life Members , town and village Progress Associations and Chamber of Commerce, cereal and cotton growers, wool producers, goat producers, cattle producers, retail businesses, trades people, health workers and nurses, cotton ginners, Tourism operators, Educators, Environmental Groups (Bush Heritage / Narran Wet Lands), Local Lands Services, BDBA, Western Lands Trustees and NSW Crown Reserve Trustees, Sustainable Agriculture and Water Management groups, past Drought Resilience workers, NSW Office of Regional Youth, junior and senior sporting clubs.

Additional Consultation Activities and Access

Throughout the consultation period print, radio and social media invited community to reach out to the Drought Plan Officer co-ordinating the consultation to ensure open and transparent consultation access. Post consultation, 4 written submissions and 3 telephone calls were received from attendees, and as a result they provided additional thoughts and evidence to further provide a comprehensive understanding of issues raised.

FAR NORTH WEST
JOINT ORGANISATION

Consultation with the **Bourke, Brewarrina, Cobar and Walgett Shires** took place across multiple destinations and towns from 9th – 19th of February. Some of the key discussion topics included:

Discussion Topic	Information and Details
Paid Advocates in the Community to Access Services (Long Term)	Extension/ commitment to Rural Financial Counselling services or Drought Resilience Officers is crucial. Pathways for support services must reflect local needs and knowledge, contrasting with the less effective centralised services. Long-term contracts are necessary to foster behavioural changes and stability within communities. Government roles should be designed for a minimum of 5 years to provide income security and encourage community integration.
Value, Reward and Acknowledge our Volunteers (Short to Mid-Term)	Funding for OH&S and RSA's, workshops to make volunteering easier and safer. Workshops for volunteer renewal and succession planning, adapting values from the past to the present.
Activities to Increase Investment Confidence in Rural and Remote Areas (Long-Term)	Economic zones with DA exemptions, and incentives for living, working, or starting businesses in regions with inadequate infrastructure. Tax concessions and financial benefits to encourage people to settle and contribute long-term, not just for transient work.
Awareness Campaign (Long-Term)	Awareness campaign between those that live in populated areas and those from rural and remote areas. Educate the public on the realities of rural life, highlighting the challenges posed by drought and counteract ignorance that can lead to frustration and mental health challenges. Promote a positive image of regional and remote Australia, educating children and encouraging visits to the bush.
Develop a Water Security Plan (LongTerm)	Develop a water security plan for Walgett, Brewarrina, Bourke and Cobar Shires. Strategies encompassing river and bore water options, considering town and agricultural needs, and tackling issues like dust suppression and road maintenance during drought.
Mental Health Awareness in the Bush (Short to Mid-Term)	Leverage existing networks to enhance mental health awareness and provide essential mental health resources and training, especially in remote areas without full-time mental health services.
Community Gatherings (ShortTerm)	Continue the support groups and events that occurred during the drought to maintain networks and address isolation, but without overburdening volunteers.
Business Education / Workshops (Short to Mid-Term)	Continue practical, on-farm workshops and provide mentoring for proactive decision-making in business and mental health, including understanding markets and financial decision-making.

Telecommunications Review (Mid-Term)	Collect data on the impacts of inadequate communication on mental health, safety, and productivity. Assess the potential benefits of new solutions like “Starlink” in improving connectivity.
Local Economy Stimulation (Short Term)	Stimulate local economies and increase main street shop front activity. Develop ‘Community Hubs’ and support small business succession planning to rejuvenate local economies and promote community benefits.
Councils to Review LEP’s to Encourage Industry and Development (Mid Term)	Review provisions to make it easier for additional lifestyle blocks and on-farm worker accommodations, acknowledging the resource constraints of some councils.
Assistance with Education Expenses to “Grow Our Own Program” (Long Term)	Incentivise local youth to develop skills and bring them back to the bush, creating a sustainable and locally knowledgeable workforce.

LONG LIST OF PROJECTS DEVELOPED

Based on the initial consultation with communities, a long list of projects was developed.

#	Initiative / Project Name	Description	LGA Key Outcome Area	Program Strategic Alignment	Drought Resilience Benefit	Drought Resilience Pillar	Funding Source Availability	Implementation Timeframe	Key Stakeholders	Short list?	Drought Technical Studies Required
1	**Government Job Tenure**	Government jobs to be contracted to for min 5 years to provide income security for communities. (People are not "job shopping" and have a commitment to put roots in a community i.e buy a house, become a member of a sporting organisation.)	Economy				Not Applicable	Long Term - Government Policy	NSW and Federal Governments. Councils.	**No**	**Actions required**: 1. Initiate discussions with NSW State Government and Commonwealth Departments. **Supporting Drought Resilience Technical Studies**: Nil
2	**Drought Resilience Officers**	Paid advocates / Representative (part time or full time) in the community to identify and access services grants focussed on Drought Resilience and Community building activities	Economic, Social,	To be identified	**Economic** - Initiative would contribute to an off-farm income stream for a person. **Social** - Increased community cohesion. **Environmental** - Not directly identified.	Respond to Drought events (Pillar 2) Build future resilience (Pillar 3)	Not identified	12 Months	NSW Government Council (s)	**TBD**	**Actions required**: 1. Initiate discussions with NSW State Government. 2. Council(s) / Regional Organisation development a position description and fund. **Supporting Drought Resilience Technical Studies**: Nil
3	**Tax Incentives / Economic Zone**	Tax incentives / economic zone: 1.A exemptions, incentives to work / live / create businesses	Economy				Not Applicable		Australian Government	**No**	**Actions required**: 1. Initiate discussions with NSW State Government and Commonwealth Departments.

		in regions that address inadequate infrastructure available in other regions eg – communications, access to energy or alternate energies, access to water 2. re-instate / encourage increase of population – reward those that decide to stay							NSW Government		**Supporting Drought Resilience Technical Studies**: Nil
4	**Water Security Plan**	Develop a regional water security, (including infrastructure) plan for the Walgett, Brewarrina, Bourke and Cobar Shires (To incorporate river and bore water options, and include town, village, stock, industrial, irrigation and domestic usage) (To allow for a strategy / plan to access water for dust suppression and road maintenance to reduce financial burded on Local Government).	Economic, Social, Environmental	NSW Future Ready Regions Strategy - Sustainable, secure and healthy water resources	**Economic** - Provides for the continued operation of agriculture and businesses that rely on the supply of water, within the community, to sustain their economic activity. **Social** - Provides a level of confidence to the local community, that there are options for the supply of water to support their business operations. **Environmental** - Supports decision making in managing the impact of bores on the natural environment.	Respond to Drought events (Pillar 2) Build future resilience (Pillar 3)	Australian Government national Water Grid NSW Regional Growth Fund	Obtain funding to conduct the studies and develop the plan, 6 months. Drought Resilience Technical Studies 6 months Development and finalisati	Australian Government national Water Grid NSW Regional Growth Fund Murray River Basin Authority	**Yes**	**Actions required**: 1. Conduct Drought Resilience technical studies. 2. Detailed cost estimate (business case / funding application. 3. Development of the plan. 4. Discussion with stakeholders and community. 5. Finalisation of plan. 6. Identification of business case requirements for subsequent priority initiatives / plans / actions. 7. Progression of business cases / implementation actions. **Supporting Drought Resilience Technical Studies**: 1. Conduct a water demand study aligned to Agriculture and domestic uses. 2. Community consultation to

		Note: Bore options, included below at Serial 5.a. (Also consider the plan would need to include a description of the extant water supply systems, secure yield study 5/10/10 rule) actions to be taken during each drought response level, actions that should be taken in preparedness for future drought periods).						on of plan 3 - 6 months			facilitate concept for the plan, prior to detailed development.
5	**Water security - Groundwater**	Increase the number of water bores for stock and domestic use and dust suppression for road maintenance / construction activities. The proving of ground water resources (quality and flow) and installation of standpipes (connected to a supervisory control system to provide a capability for standpipes to be switched on / off, to cross level usage between locations to	Econo mic, Environ mental	NSW Future Ready Regions Strategy - Sustainable, secure and healthy water resources	**Economic** - Provides for the continued operation of agriculture and businesses that rely on the supply of water, within the community, to sustain their economic activity. **Social** - Provides a level of confidence to the local community, that there are options for the supply of water to support their business operations. **Environmental** - Supports decision making in managing	Respond to Drought events (Pillar 2) Build future resilience (Pillar 3)	NSW Future Drought Fund (for technical studies) Australia n Governm ent national Water Grid NSW Regional Growth Fund	Pre-Construc tion - 16 months Construc tion 6 months	NSW DPE - Water Agricult ure NSW NSW Farmer s associa tion Identifi ed Agricult ure	**Yes**	**Actions required**: 1. Conduct Drought Resilience technical studies. 2. Detailed design of selected bore locations. 3. Detailed cost estimate. 4. Complete full business case. 5. Funding applications and approvals 6. Tender for construction. **Supporting Drought Resilience Technical Studies**: 1. Conduct a ground water resource study aligned to Agriculture and local use. 2. Prove (drill and assess) bores (quality and flow) in an agreed

		adjust for changes in quality and flow rates) in up to five locations, to provide greater resilience for the agriculture and town water supplies of local towns.			the impact of bores on the natural environment.				Industries		number of locations (e.g. five). 3. Community consultation.
6	**Stronger communities program**	Series of activities of events to promote "support groups" for social cohesion and connectedness that Councils support /initiate during periods of droughts Note: If staff required to support - then they are paid for by the Council (reduce load on 'volunteers' to organise, conduct and clean up)	Social	NSW Future Ready Regions Strategy - Stronger communities and diverse regional economies	**Economic** - Initiatives would contribute to an off-farm income stream. **Social** - Increased community cohesion, reduced demand for mental health services. **Environmental** - Not directly identified.	Respond to Drought events (Pillar 2) Build future resilience (Pillar 3)	NSW Regional Growth Fund	2 - 3 Months	Regional NSW	**TBD**	**Actions required**: 1. In conjunction with Community organisations develop a program of activities. 2. Develop a plan for the conduct of each activity. 3. Deliver the scheduled activities. **Supporting Drought Resilience Technical Studies**: Nil.
7	**Rural Financial Program**	Provision of business mentoring to support 'proactive decision making' (livestock trading, decision making -based on facts and figures) (Workshops / one-on-one)	Economy	NSW Future Ready Regions Strategy - Stronger primary industries prepared for drought	**Economic** - Improved ability to maintain livestock nutrition **Social** - Improved resilience of farmers in managing through drought. **Environmental** - Not directly identified.	Planning and Monitoring (Pillar 1) Respond to Drought events (Pillar 2) Build future resilience (Pillar 3)	NSW Department of Agriculture, Fisheries and Forestry	Immediate	Regional NSW NSW Rural Financial Counselling service	**TBD**	**Actions required**: 1. Identify topics to be covered (e.g. Succession planning Farm budgeting Forecasting and cash flow analysis Farm debt mediation Bank reviews and relationships Help refinancing debt Access government assistance and rural loans

											Understand farm loan interest rates Understand your financials \Build a business plan Identify areas of risk Benchmarking Referrals Debt relief and negotiation) 2. Develop a schedule. 3. Advertise program and call for participants. 4. Deliver the program.
8	**Communications Security**	Improve connectivity in the region to support business and agricultural productivity	Economy						NSW and Federal Governments. Councils.	**TBD**	**Actions required**: 1. Initiate discussions with NSW State Government and Commonwealth Departments. **Supporting Drought Resilience Technical Studies**: Nil

SECONDARY COMMUNITY CONSULTATION

A second round of community consultation was undertaken to gain feedback surrounding the long list of projects developed and understand the community priorities. This was to ensure that the long list of projects, presented to Council for prioritisation, accurately reflected the needs, perspectives, and insights of the respective communities.

This consultation was undertaken via Microsoft Teams with representatives across all three communities present at the one meeting, facilitating region-based discussion.

Based on the long list of projects the following priorities were raised by the community:

Priority Project	Commentary
Water Security - **Weirs**	*Weirs* Unregulated water system downstream from Walgett is a critical concern – is there a potential for dam construction? State Government has initiated a project 'Fish passage: Reconnecting the Northern Basin project' which involves the lowering of weir walls in order to enable the construction of fish passages e.g. Fish Locks. Phase 1 will include the modification to the Banarway Weir, Calmundi Weir and Louth Downstream Weir. The impact of dropping the weir wall heights, or removing the suggested 22 weirs across the region, will have critical implications on water security as the storage capacity of dams along the river passage will be significantly reduced. At the end of the 2018-19 drought alone (with current weir structure), there was no water in weir pool at Brewarrina and weir pool at Collarenebri. **Project Suggestion: Advocacy piece for the regions – perception that currently the 'scientists' and 'bureaucracy' do not differentiate the problems associated with the Hume fishway and the Northern River system. Because it worked in the Hume river does not mean it will work in the Northern Rivers.**

Water Security - **Buybacks**	*Water Buybacks* A report was produced in 2010 by Judith Stubbs – '*Social and Economic Impacts of Reduced Irrigation Water'* – that assigned monetary values to the costs associated with the social, environmental and economic impacts, job losses and people departure as a result of implementation of water buybacks in 20052006. Because the report was not written by Council, it received no support. Bourke and Warren Shire Councils are exploring a joint venture (with support of RDA) to gain funding to conduct extensive research within the region to develop a database of both data and information that examines the economic and social impacts on decision making within the region. Walgett Shire Council highlighted a desire to be involved in this project too. It has also been observed that the water buyback was a significant trigger for population decline at an accelerated rate. **Project Suggestion: Funding of an officer to complete this body of work across the interested LGAs to develop the database that could then be presented alongside business cases, etc, when seeking further funding in future. Or support/ development of business case to obtain funding for the Councils to complete in house.**

Tax Incentives And Economic Zones to Encourage People to Move to Region and Stay in Region	Taxation incentives are critical for rural and remote regions to keep people in the region. Declining population is the most significant concern and has been escalated by water takebacks and water buybacks within the community. There are currently some programs already available: - RIC Farm Investment Loan – Interest only for first five years of loan, then principal and interest for remainder of ten-year loan (max duration). Maximum amount is $2 M. - RIC Drought Loan – For primary production industries only (e.g. agriculture, horticulture, pastoral, beekeeping or aquaculture industry). Similar monetary value to Farm Investment Loan. - RAA Drought Ready and Resilient Fund – for eligible primary producers (earn at least 50% of gross income or at least $75,000 from primary production). Can not be used directly for labour instead for products, activities or services. Valued at $250,000 and a low interest loan. During the last drought, the mining industry was in demand, and therefore a lot of the farmers who were put out of work as a result of drought were able to be employed within mining industry. Councils are frequently understaffed and under resourced, which offers the opportunity for them to draw upon community members who are out of work to complete projects within the region. A significant concern is the local industries that are not primary producers as they do not have access to the drought fund packages but indirectly suffer from the loss of financial security within the region. **Project Suggestion 1: 'Minimum Wage' (Drought Keeper Program) to be applied to those experiencing job loss (and consequential income loss) as a result of drought.** **Project Suggestion 2: Develop employment packages for community members who lose their job during drought, and can instead work for Councils to complete projects that have not been completed due to lack of resources e.g. road works, infrastructure developments, etc.** **Project Suggestion 3: Economic support and incentives for local industries to ensure that they are able to remain working in the region during drought periods.** **Project Suggestion 4: Further research and data collection into strategies implemented with success, that have increased retention within rural communities and also increased the number of people entering the region.** *Risk: It was raised that we need to be aware of the existing economic packages that are already available as detailed above. It may be better to explore options for mapping when people need the support, and developing exit strategies for those financial support packages.*

Healthcare and Connectivity	Promotion and awareness of mental health is no longer the most significant concern – this has transitioned to clinical psychiatrist availability. The closest psychiatrists available are in Dubbo and they have closed books. Financial security and job loss was a significant contributing factor to the experienced mental health concerns. Access to internet is a significant problem and affects connectivity within the regions to medical support and industry assistance. **Project Suggestion 1: Increased opportunities for individuals to access clinical support (not only in closer proximity to region but also with increased availability).** **Project Suggestion 2: Improved network connectivity.**
Regional and Rural Skill Building – Ensuring Ongoing Capacity and Diversification	Historically, the rigid requirements around paperwork, etc, for subcontractor work within the regions was minimal. As a result, individual contractors were able to complete work on a per job cost (instead of an hourly or daily rate) and could organise the staff they wanted from the community to complete the project. The paperwork and developed legislation has become a significant challenge that is affecting the ability for contractors to deliver projects. In the last drought the Bourke region were saved by Carbon Farming and the Goat industry. Small businesses (local businesses not primary producers) in the town suffered more than graziers. **Project Suggestion: Workshops and opportunities for individuals to develop the skills required for carbon farming and working within carbon markets, getting their businesses online, skill building – developing alternate 'sidehustles' that can be leveraged into primary income sources during drought periods when their usual income source is jeopardised.**

SURVEY FEEDBACK

While the secondary community consultation raised crucial information relating to the prioritisation of the long list of projects, due to the breadth of the region and pre-existing commitments, in comparison to the initial consultation, the attendance was significantly reduced. In order to ensure that all initial members of the community had the opportunity to comment on project prioritisation, a survey was developed which contained the long list of projects presented within the table in *Section 6* of this report. 9 responses were recorded.

Project Name and Description	Average Score (1-10)
Water Security - Weirs: State Government has initiated a project 'Fish passage: Reconnecting the Northern Basin project' which involves the lowering of weir walls in order to enable the construction of fish passages e.g. Fish Locks. Phase 1 will include the modification to the Banarway Weir, Calmundi Weir and Louth Downstream Weir. The impact of dropping the weir wall heights, or removing the suggested 22 weirs across the region, will have critical implications on water security as the storage capacity of dams along the river passage will be significantly reduced. At the end of the 2018-19 drought alone (with current weir structure), there was water in the weir pools at Brewarrina and Collarenebri, but between these two points there were many parts where the river was completely dry. *Project Suggestion:* Advocacy piece for the regions – perception that currently the 'scientists' and 'bureaucracy' do not differentiate the problems associated with the Hume fishway and the Northern River system. Because it worked in the Hume river does not mean it will work in the Northern Rivers.	5.8
Water Security - buybacks: A report was produced in 2010 by Judith Stubbs – 'Social and Economic Impacts of Reduced Irrigation Water' – that assigned monetary values to the costs associated with the social, environmental and economic impacts, job losses and people departure as a result of implementation of water buybacks in 2005-2006. Because the report was not written by Council, it received no support. Bourke and Warren Shire Councils are exploring a joint venture (with support of RDA) to gain funding to conduct extensive research within the region to develop a database of both data and information that examines the economic and social impacts on decision making within the region. Walgett Shire Council highlighted a desire to be involved in this project too. It has also been observed that the water buyback was a significant trigger for population decline at an accelerated rate. *Project Suggestion:* Funding of an officer to complete this body of work across the interested LGAs to develop the database that could then be presented alongside business cases, etc, when seeking further funding in future. Or support/	6.2

development of business case to obtain funding for the Councils to complete in house.	
Tax Incentives and Economic Zones to Encourage People to move to region and stay in region: Taxation incentives are critical for rural and remote regions to keep people in the region. Declining population is the most significant concern and has been escalated by water takebacks and water buybacks within the community. *Project Suggestion:* 'Minimum Wage' (DroughtKeeper Program) to be applied to those experiencing job loss (and consequential income loss) as a result of drought.	6.1
Tax Incentives and Economic Zones to Encourage People to move to region and stay in region: Taxation incentives are critical for rural and remote regions to keep people in the region. Declining population is the most significant concern and has been escalated by water takebacks and water buybacks within the community. *Project Suggestion:* Develop employment packages for community members who lose their job during drought, and can instead work for Councils to complete projects that have not been completed due to lack of resources e.g. road works, infrastructure developments, etc.	5.8
Tax Incentives and Economic Zones to Encourage People to move to region and stay in region: Taxation incentives are critical for rural and remote regions to keep people in the region. Declining population is the most significant concern and has been escalated by water takebacks and water buybacks within the community. *Project Suggestion:* Economic support and incentives for local industries to ensure that they are able to remain working in the region during drought periods.	6.4
Tax Incentives and Economic Zones to Encourage People to move to region and stay in region: Taxation incentives are critical for rural and remote regions to keep people in the region. Declining population is the most significant concern and has been escalated by water takebacks and water buybacks within the community. *Project Suggestion:* Further research and data collection into strategies implemented with success, that have increased retention within rural communities and also increased the number of people entering the region.	5.4

Healthcare and Connectivity: Promotion and awareness of mental health is no longer the most significant concern – this has transitioned to clinical psychiatrist availability. The closest psychiatrists available are in Dubbo and they have closed books. Financial security and job loss was a significant contributing factor to the experienced mental health concerns. *Project Suggestion:* Increased opportunities for individuals to access clinical support (not only in closer proximity to region but also with increased availability).	6.6
Healthcare and Connectivity: Ongoing consultation around the impacts of drought on population and community development needs to be a regular activity, especially in key demographic groups such as First Nations people, young families and the youth. Their view on drought, the connection to it and the solutions around it, should not be underestimated. *Project Suggestion:* Throughout the life of the Regional Drought Resilience Plan, energy is invested in ensuring that underrepresented groups have the opportunity to contribute to the future of the region.	6.6
Healthcare and Connectivity: Access to internet is a significant problem and affects connectivity within the regions to medical support and industry assistance. *Project Suggestion:* Improved network connectivity.	5.6
Regional and Rural Skill Building - Ensuring ongoing capacity and diversification: Historically, the rigid requirements around paperwork, etc, for subcontractor work within the regions was minimal. As a result, individual contractors were able to complete work on a per job cost (instead of an hourly or daily rate) and could organise the staff they wanted from the community to complete the project. The paperwork and developed legislation has become a significant challenge that is affecting the ability for contractors to deliver projects. In the last drought the Bourke region were saved by Carbon Farming and the Goat industry. Small businesses (local businesses not primary producers) in the town suffered more than graziers. *Project Suggestion:* Workshops / capacity development to provide individuals with skills to identify alternate business opportunities in drought situations that can be leveraged into primary income sources during drought periods when their usual income source is under threat.	6.2

COUNCIL REVIEW

The RDRP Program requires Councils to:

- Consider both water security and environmental and social resilience needs.
- Collaborate across Local Government boundaries.
- Encourage active community participation to capture ideas and thoughts related to drought preparation, management and recovery.

The aim of the hybrid (in-person and online) Council review meeting was to:

- Collect Council feedback, and reach an agreeable position across the region, on previously completed sections of the RDRP.
- Gain Council input and perspectives on observations and lessons from prior droughts, current or planned economic initiatives and responses to drought, and key organisations and community groups to be engaged during the project.
- Review the current compiled list of potential projects and initiatives, and received feedback on whether they align with any Council project plans and/or whether any projects/initiatives are absent from the list.
- Provide Councils with the planned next steps for the completion of the RDRPs.

Based on the discussions completed during this meeting the following feedback was received, which guided the prioritisation of projects and feedback.

Bourke Shire Council
Bourke Shire Council underscores the continuous cycle of drought and the critical nature of water as a scarce resource, even outside of drought periods. They advocate for framing drought as a persistent condition rather than an occasional event, emphasising the need for community empowerment and economic strengthening to mitigate drought impacts. The council also suggests that while drought support for agriculture is crucial, the broader business community needs more timely support to prevent economic decline.

Brewarrina Shire Council
Brewarrina Shire Council focuses on the critical need for water security and mental health support during drought. They stress the importance of early intervention for mental health and drought preparedness training to enhance community resilience. The council reflects on successful government initiatives that maintained employment and business during drought, yet points out the challenges of ensuring uniform water restrictions and providing critical water supplies for safety and infrastructure maintenance.

Cobar Shire Council
Cobar Shire Council discusses the limitations in agricultural-focused drought support, highlighting the need to support small businesses that often feel the impacts of drought more acutely and rapidly than the agricultural sector. They emphasize the importance of creating a timeline with indicators for councils to gauge economic resilience and respond appropriately, also acknowledging the private sector's role in providing employment opportunities during drought periods.

Walgett Shire Council

Walgett Shire Council comments on the social cohesion efforts during drought periods, including holding small community gatherings. The council notes the lack of preventative pastoral care and social support services compared to previous droughts, suggesting this may have contributed to increased population loss. They also highlight the minimal government support for cross-sector employment and the necessity of broader applications beyond agriculture due to the interconnected nature of regional economies and resources like water.

Discussion Insights

Discussions suggest a pivot from the heavy focus on agriculture to a broader consideration of regional resilience, incorporating the environmental realities of arid conditions. A need for more inclusive engagement strategies is noted, especially with Aboriginal communities and the pivotal 30-40 age demographic. The vision and objectives of the Regional Drought Resilience Plans (RDRPs) should reflect the economic, social, and environmental impacts while removing any narrow focus on agriculture to encompass the wider landscape and community needs.

CONSULTATION OVERVIEW

Combining all insights, it is evident that all three shires seek more than just short-term fixes; they demand robust, integrated strategies that address both immediate and long-term needs. Water security emerges as a common thread of concern, albeit with different priorities and proposed solutions reflecting each council's specific circumstances. The feedback also underscores a universal desire for improved economic, social, and environmental resilience that can sustain these communities through the unpredictable challenges posed by drought and other climatic variabilities.

Appendix 6: Project Economic Feasibility Assessment and Cost Benefit Analyses

CONTENTS

FAR NORTH WEST JOINT ORGANISATION

Figures

Tables

FAR NORTH WEST JOINT ORGANISATION

1. Introduction

This report contains an assessment using rapid economic appraisal of the options shortlisted for the Regional Drought Resilience Plan for the Far North West Joint Organisation.

2. Background

The Regional Drought Resilience Planning Program (RDR Plan) ('The Program') is designed to enable local governments and their communities to better prepare for, respond to, endure and thrive during, and recover from drought.

3. Project Reports

There are two completed reports for the project under the Program:

- Regional Drought Resilience Plan (RDR Plan-016) covering Coonamble Shire Council, Warren Shire Council, Bogan Shire Council which together make up the Northwest NSW Region; and
- Regional Drought Resilience Plan (RDR Plan-004) covering Bourke Shire, Brewarrina Shire, Cobar Shire and Walgett Shire, which together make up the Far Northwest Region[19].

One of the outcomes of each report is the development of initiatives and projects to improve the drought resilience of the region across four outcome areas:

- People, Culture, and Community
- Economy
- Landscape and Natural Environment
- Infrastructure and Built Environment

Each report contains a long list of considered projects, and each project proposal is marked according to whether it was recommended for shortlisting.

This economic assessment addresses the second Plan (RDR Plan-004) covering Bourke Shire, Brewarrina Shire, Cobar Shire and Walgett Shire, which together make up the Far Northwest Region.

4. Economic Assessment

The assessment phase of the project is for The Stable economics team to do a rapid assessment of the shortlisted projects.

It is proposed that this assessment comprise:

- A logic structure that expands at the project level, that structure developed for the plan[20];

[19] This region is not to be confused with the Far North West Joint Organisation (FNWJO), which is a representative body for Bourke, Cobar and Walgett Shire Councils as proclaimed. The FNWJO lodged successful applications to develop these two Regional Drought Resilience Plans on behalf of the seven Councils of Bogan, Bourke, Brewarrina, Cobar, Coonamble, Walgett, and Warren Shire. All seven councils are part of the Western Plains Functional Economic Region.

[20] Pg. 20-21, TPG23-08 NSW Government Guide to Cost-Benefit Analysis

- A decision tree for each shortlisted project that determines the steps to assess and realise the net benefits of the project proposed[21]; and

- A rapid cost-benefit analysis[22], inputting cost and benefit data to the NSW Treasury proforma, estimated utilising the data calculated in previous two tasks.

The "rapid" nature of the technique, is to assess benefits and costs only at a high level, using readily available secondary data, but not undertaking primary research. Where primary data is lacking, the assessment proceeds by estimating though a decision tree the likely costs and benefits of each "known unknown" in the project logic, and incorporating this assessment on a risk (probabilistic basis) in the analysis. This methodology follows broadly the real options methodology in the NSW Treasury Guidelines, while remaining within the cash flow framework of Treasury's recommended rapid costbenefit analysis.

5. Data needs

To deliver on the above methodology there are simple economic data needs:

- Available secondary data sources, including past assessments of proposals, or of related projects;
- Rapid assessment, using these sources, of the project logic as integrating with the plan logic.

5.1 Projects for Analysis

The study used detailed consultation techniques to shortlist projects for potential investment.

The following project types were shortlisted across both reports:

- Water security - Groundwater
- Telecommunications Security
- Water Security Plans

These three project types can be described generically as:

- **Water security:** Including Groundwater assessments and water reliability studies for the two regions or their member councils. This may include aquifer assessments, bore monitoring programs or water supply assessments incorporating groundwater. Key data sources were the Councils themselves and state planning bodies (regional water plans).
- **Telecommunications planning**, including mobile service areas, programs to identify communications gaps and post proposals to address telecommunications issues in these regions. Key sources were past telecommunications projects and their project managers.

[21] See Scenario Planning, as an input to Real Options Assessment, Pg. 81 ff. TPG23-08 NSW Government Guide to Cost-Benefit Analysis

[22] See A8.1 Preliminary Cost-Benefit Analysis, Pg. 100, TPG23-08 NSW Government Guide to Cost-Benefit Analysis

- **Water Security Planning**: Existing water planning for the wider region, including Western Regional Water Strategy, and identifying complementary plans from within Councils. The key sources were existing water plans.

In addition, some of the "To be considered" projects (not shortlisted in the first round, but ranking highly) were selected for further analysis. These are projects that did not make the cut, but were thought worthy of further consideration. A panel reviewed these projects and chose a selection. In some cases these aligned with existing projects, providing expansion or more details scope – eg. Improving bore water quality, rather than quantity.

5.1.1 Projects for RDRP 004

The final shortlisted projects for Regional Drought Resilience Plan 004 for Far Northwest NSW - Bourke Shire Council, Brewarrina Shire Council, Cobar Shire Council and Walgett Shire Council are listed below.
The following specific projects in Area 004:

Water Security:

Water Security Groundwater - Proving of groundwater resources (quality and flow) and installation of standpipes

- Improve groundwater quality monitoring through auditing the current bore network, implementing regular sampling programs and collate groundwater quality data from industry and government sources into one database. Invest in technology and research to understand how treated groundwater can support towns, landholders and industries to secure a water supply.

Off-stream storage at Walgett

- The Namoi Draft Regional Water Strategy[23] included an identification that Walgett township had issues with water reliability. The town relies on in-stream water supply from a weir. In recent years, releases from Keepit dam for the town supply have had to cease in drought periods, and emergency supply measures put in place. One of these is supplementing the surface supply by groundwater, though that supply has aesthetic water quality issues that have required reverse osmosis treatment to reduce sodium levels in previous droughts. An off stream water storage offers the potential to reduce the need for this extra water treatment and other emergency water supply measures when dam releases cease in drought.

Develop a water reuse project in Cobar Shire Council

- Regional Water Strategy Macquarie–Castlereagh – Implementation Plan[24] identified the Nyngan Cobar Pipeline as a specific strategy for Cobar. In addition, the Strategy stressed the importance of water conservation and reuse. However, there were no implementation proposals in this area specifically for

[23] NSW Department of Planning, Industry and Environment (2021) Draft Regional Water Strategy Namoi: Strategy March PUB20/313

[24] NSW Department of Planning, Industry and Environment (2023) Regional Water Strategy Macquarie–Castlereagh – Implementation Plan October

Cobar, with the focus on boosting leakage reduction programs. As a mining town, there's potential for recycling that may not be available to other towns and which could be theoretically be implemented relatively cost effectively.

Telecommunications Security

- **Grant program to help farmers purchase Agtech devices and applications.** Measure water productivity and water sustainability indices for cotton production systems, identifying potential changes to water use, productivity and sustainability.

Water Planning

Two relevant projects, under the heading Long Term Water Security Projects were shortlisted in the 004 Region with water planning objectives

- Development [of a] water security strategy to ensure sustainable water management and availability in the Barwon-Darling catchment area.
- Develop a regional water security, (including infrastructure) plan for the Walgett, Brewarrina, Bourke and Cobar Shires

In conceptualising these projects, the plan including a scope of feasibility studies, community engagement and development of funding proposals. It is difficult in an economic analysis to measure the benefits of regional or basin plans *per se*, so we have taken the approach of assuming that the two proposed plans would occur as part of the base case, but the development of the plans into particular options has been measured by representative case studies of weir raising, off stream storage and reuse, in particular the Cobar reuse project which was proposed elsewhere.

From these shortlisted options, we deduce six options for analysis:

- Base Case: Planning without projects: it is assumed for the sake of clarity, that considering a program with up to six projects will incorporate a base level of expenditure on water security planning, and we've focused the water planning net benefit estimates on projects that might develop from that planning.

- Option 1: Water security: Groundwater – investigation and development of bore fields in the region
- Option 2: Telecommunications Upgrade – investigation of mobile signal blackspots and developing a plan to address this issue, including a grants program for agtech devices.
- Option 3: Water security: Off stream storage Walgett – a proposed off stream storage near the Namoi Barwon river junction.
- Option 4: Water security: Weir Raising – as a part of the third option, a benchmarked weir upgrade
- Option 5: Water Security: Off stream storage generic - as a part of the third option, an alternative
- Option 6: Water security: Cobar Water Reuse – a water recycling project in the town with the greatest industrial demand for water in the region.

5.2 Project Logic

This task consists of adapting the program logic diagrams down to the project level by identifying key benefits and costs and the logic of how they will be delivered.

For Project 004, the following Logic Map was presented:

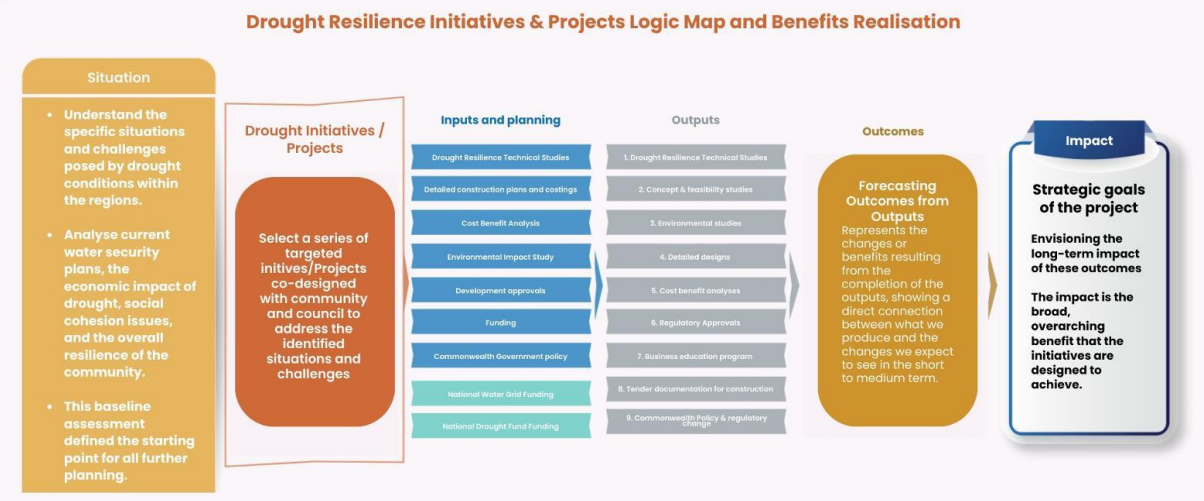


Figure 1: Initiatives and Projects Overview Logic Map

For the shortlisted individual projects, the draft project logic maps proposed are:

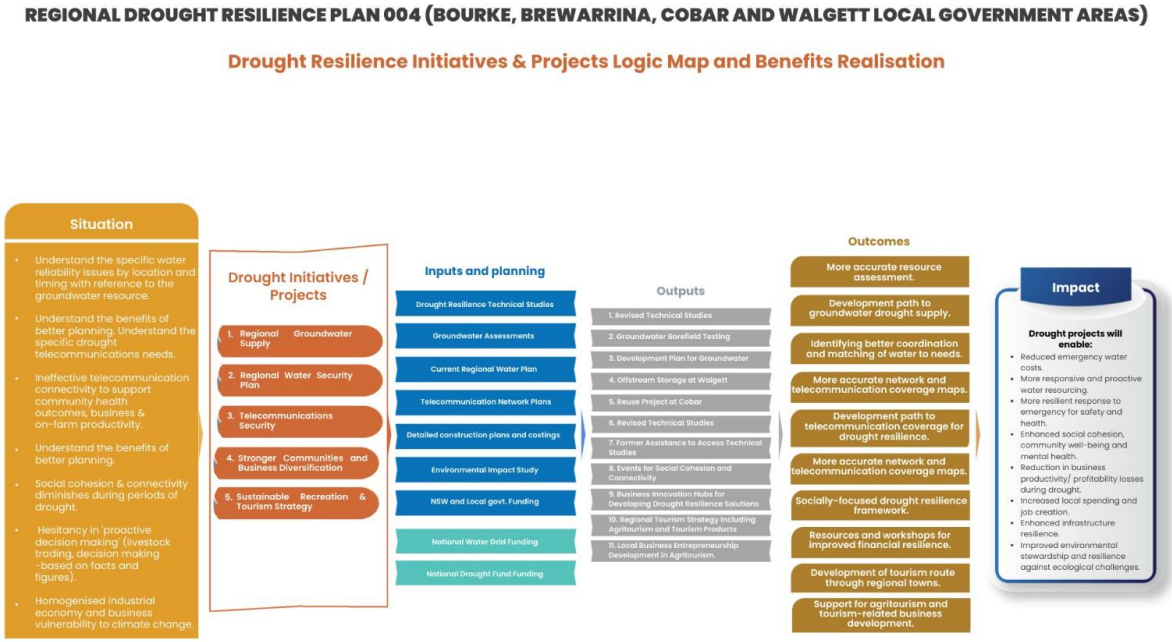


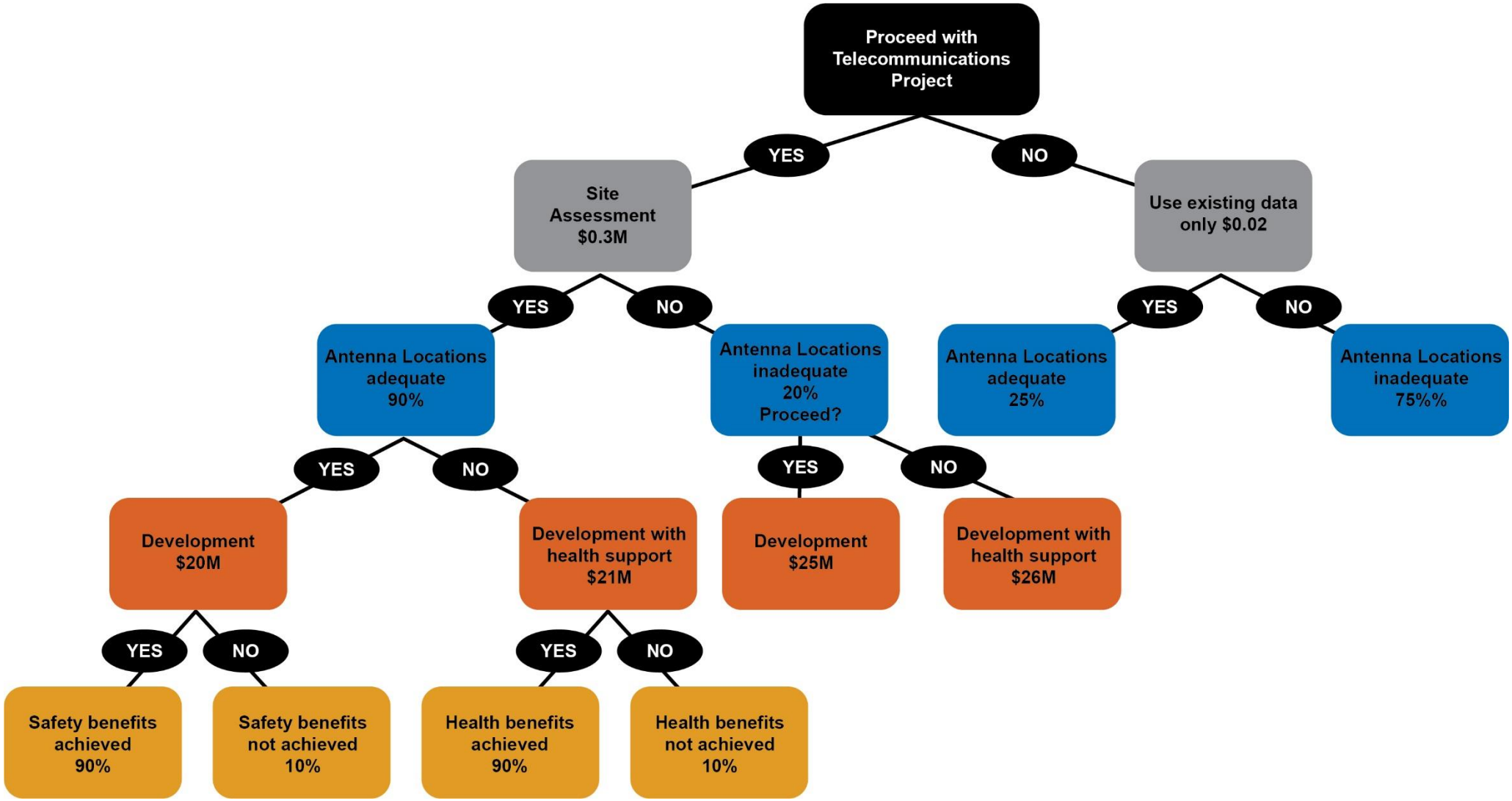
Figure 2: Projects Logic Map

5.3 Decision Analysis

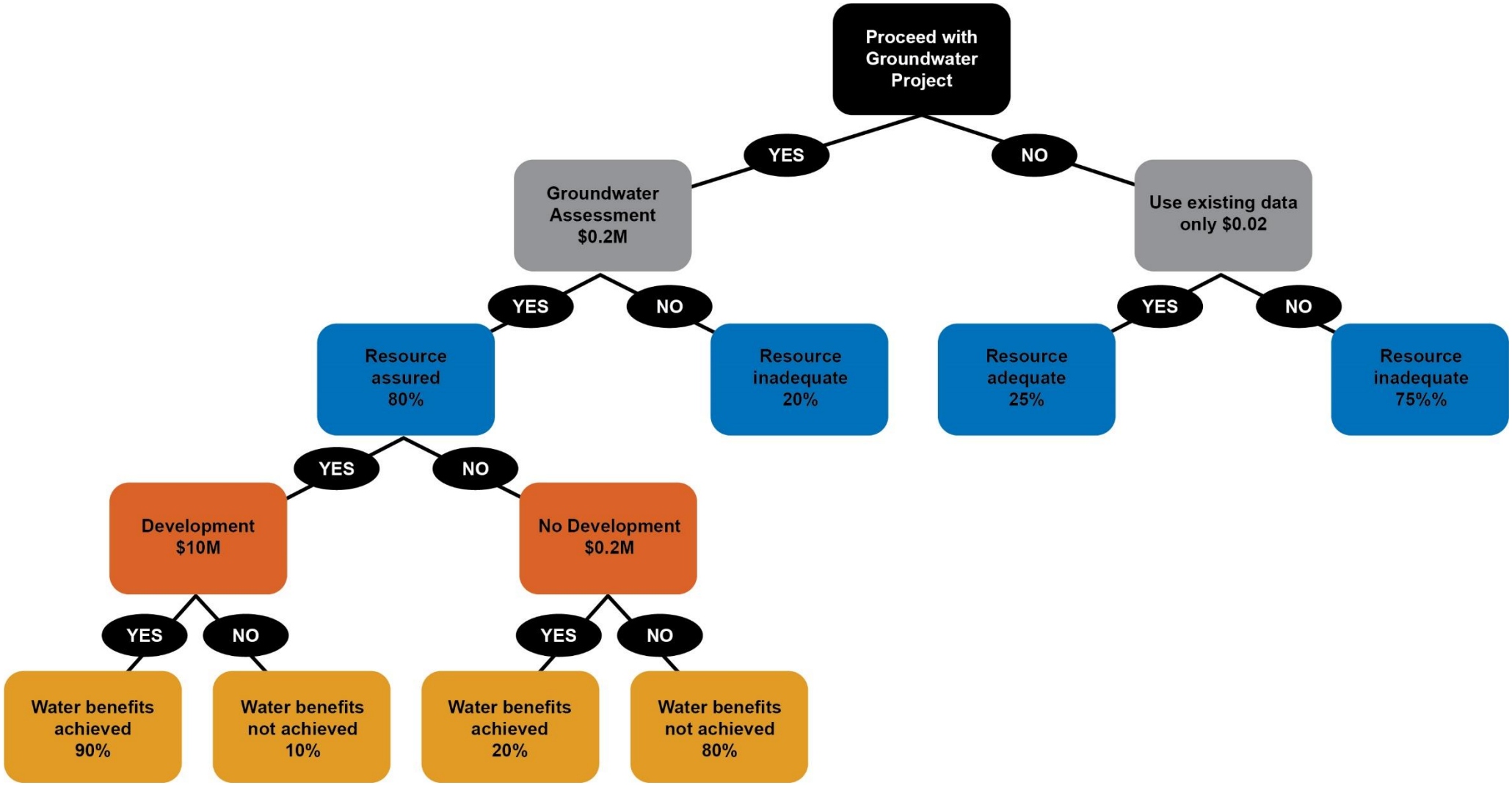
In the absence of detailed planning and information, decision analysis allows a risk based assessment of likely costs and benefits of strategies. Decision analysis incorporates step wise probability estimates of costs and benefits of each decision identified as necessary to reach the project objective. A groundwater example is shown.

It has been used in this analysis where investigations are incomplete and the yield or viability of a groundwater aquifer or the density of and area of mobile phone towers are unknown, and will be only known after the investigations are complete.

Telecommunications Decision Tree



Groundwater Decision Tree



6. Costs

The costs have been calculated on benchmark estimates by area and scope. This section breaks down the costs for each option to achieve the benefits listed in Section 6 **Error! Not a valid bookmark selfreference.**.

6.1 Groundwater

The costing for the groundwater project has been developed using dispersed investment of exploratory and production bore drilling, repeated across a three phase program at a total cost of $0.6M. Test drilling and. field development cost of $120,000.Productions is based on three town production bores, each with a drilling and lining cost of $15,000, and a pump and piping cost (near to treatment plant) of $35,000.

6.2 Telecommunications

The principal tasks of the Telecommunications Security project was to investigate significant areas of non-connection to the mobile broadband network and to implement “black spot” iinvestments to locate new towers so that there is continuity of coverage.

There have been a number of similar programs that can be used to benchmark costs.

Table 1: Mobile phone coverage investment

Telecommunications	Cost per town/ community	Location	Number of communities	Total cost
Black spot review	$684,000	Remote Aboriginal communities	19	$13,000,000
Black spot review	$960,000	Outback Australia	43	$41,300,000

In addition, the project would have an optional extension to provide agtech devices and appropriate support and training.

Table 2: Water and Agtech devices

Item	Unit cost	Source
Water quality and agtech probes	$2,000	Market price

6.3 Water security

The main report shortlists a number of projects on strategic water planning. To scope how these might be implemented, a range of storage options are evaluated in Options 3 to 6. The costs have been benchmarked from Queensland and NSW studies.

Table 3: Capital Cost Benchmarks

	Capital Cost per Unit Capacity *$/ML*	Benchmark *Location*	Capacity *ML*	Cost *$*	Notes
Offstream Storage	$37,000	Walcha (Apsley)	300	$11,000,000	
Offstream Storage	$43,000 *$/M of wall*	Tuross River Study	3,000	$130,000,000	Cost was revised as part of a variation.
Weir Rehabilitation	$400,000	Darling weirs program	30	$12,000,000	See also Qld weir upgrades of $3m to $11M)

7. Benefits

The impact charts illustrate the likely benefits of the major options:

- Groundwater o Avoided emergency drinking water supply costs – typically valued in the literature at above $7 per kL;
    - Irrigation benefits – typically valued at crop gross margins of $3 per ML.
- Telecommunications:
    - Improved telecommunications offer safety and health benefits to the region. As permanent infrastructure, these benefits accrue both in and outside emergency situations like drought or flood.
    - Safety: emergency response time savings valued using risk and value of life.
    - Health: reduced transport cost to nearest health centre. Improved pre-care for emergency patients.
- Water planning
    - Improved reliability of drinking water supply from better matching of storage and transmission.
      Values in terms of emergency supply costs avoided at $7/kL.

In this section, these benefits are broken down in more detail for input to the cash flow analysis.

It's important to first set down that many of the benefits are driven by the town, regional or state population. The following table, adapted from the main report, sets the key values for this region:

Table 4: Population and Water Demand

	Bourke	Brewarrina	Cobar	Walgett	Bogan	Coonamble	Warren
Population	2,340	1,356	4,059	5,253	2,467	3,732	2,550
Projected Population [2041]	1,556	931	2,555	3732	1,581	2,965	1,755
Drought Water Consumption (kL pa 2023)	101,739	40,478	176,478	228,391	68,739	162,261	110,870
Drought Water Consumption (kL pa 2041)	67,652	58,957	111,087	162,261	107,261	128,913	76,304
Household Water Consumption (kL per household pa)	597	400	203	300	314	165	231
Potable Water Consumption (kL per household pa)*	100	100	100	100	100	100	100

Source: NSW Department of Planning Population Projections & NSW Department of Local Government Water Supply Statistics

* Estimated using urban individual use metering studies

7.1 Groundwater

Groundwater is a significant variable in managing water security in the far west councils in this plan. Groundwater is used in town water supplies to ensure volume in droughts by providing supplementary water when for example, in drought, regulated releases cease from upstream storages, or in dry periods more generally, surface water quality declines with reduced flows.

In the main report, borefields are described as one of the key system assets in delivering Water Security:

- **Borefields**. Groundwater accessed through borefields supplements surface water sources, particularly during periods of drought. The use of borefields requires careful management to prevent over-extraction, which can lead to declining water levels and quality. The result is Option 5

7.2 Telecommunications

In the main report, Telecommunications Security is proposed as a project because of the likely benefits that are described as:

- supporting the operational continuity of local businesses, community and agricultural activities and

- improving the community's confidence in their economic stability.

These benefits can be further broken down into:

- local business and community operational continuity benefits;
- benefits for non-local users, either as receivers of telecommunications in other regions, or as visitors to the far west region;
- health related benefits for the local community.

To these can be added the technological benefits of the proposed device program being used by farmers to give a more efficient water use.

That is, by the types of users and their location.

Measuring these benefits includes calculating the time savings from better telecommunications and valuing them using average earnings.

The following Table shows the calculation of business and community continuity benefits:

Table 5: General Telecommunications Benefits

General Telecommunications benefits		Notes
Black spots addressed	5	
Population Impacted	100%	
Time saving (hours per annum per person)	0.1	Estimate.
Value	$1,958	Average Weekly Earnings
Value per hour	$56	35 hour week
Value of time saving per annum	$5.59	
Total population Impacted	*21,757*	Population of the region
Impact on state population (hours per person)	0.001	
Value of times savings per annum per person	$0.06	
Total population Impacted	8,144,000	State Population

The total value in the Rapid CBA Model is calculated as the value of local time saving ($5.59 per person) times the local population, plus the value to the population as a whole per person, $0.06 times the state population.

7.3 Water Planning

8. Net Benefit

The following tables show the results after costs are netted off from benefits.

8.1 Results

Table 6: Rapid Benefit Cost Analysis Results

Option	NPV	BCR	NPV Rank out of 6	BCR Rank out of 6
Base Case: Planning without projects	-$195,238		-	-
Option 1: Water security: Groundwater	$1,258,513	5.131	**3**	**1**
Option 2: Telecommunications Upgrade	$9,424,809	4.709	**1**	**2**
Option 3: Water security: Offstream storage Walgett	$4,671,546	1.811	**2**	**4**
Option 4: Water security: Weir Raising	-$1,367,581	0.884	**6**	**6**
Option 5: Water Security: Offstream storage generic	-$470,114	0.957	**5**	**5**
Option 6: Water security: Cobar Water Reuse	$793,840	2.014	**4**	**3**

Source: analysis using NSW Treasury Rapid BCA Model

Options 1, 2 3 and 6 have benefit cost ratios greater than 1 at 5% discount rate, while options 4 and 5 do not.

8.2 Sensitivity and Distributional Analysis

The results are sensitive to discount rate in that all options have positive Net Present Values at a lower discount rate (3%), but Options 4 and 5 retain a negative Net Present Value at a higher discount rate (7%).

Table 7: Sensitivity testing – Discount Rate

Sensitivity Option	3% Discount Rate NPV	BCR	7% Discount Rate NPV	BCR	10% Discount Rate NPV	BCR
Base Case	-$197,087		-$193,458		-$190,909	0.000
Option 1	$1,391,675	5.111	$1,142,186	5.146	$993,765	5.158
Option 2	$12,715,485	6.008	$7,089,257	3.788	$4,707,761	2.850
Option 3	$7,616,135	2.319	$2,596,053	1.452	$500,297	1.087
Option 4	$1,342,659	1.114	-$3,303,646	0.720	-$5,289,190	0.552
Option 5	$2,494,661	1.229	-$2,564,603	0.765	-$4,687,059	0.570
Option 6	$1,115,599	2.227	$566,258	1.815	$335,208	1.554

The results are insensitive to cost and benefits variance up to +/- 20%.

Table 8: Sensitivity to Cost and Benefit Variance

Option	Costs +20% NPV	BCR	Costs 20% NPV	BCR	Benefits +20% NPV	BCR	Benefits 20% NPV	BCR
Base Case	-$234,286		-$156,190		-$195,238		-$195,238	
Option 1	$1,197,579	4.276	$1,319,447	6.413	$1,571,150	6.157	$945,877	4.105
Option 2	$8,916,656	3.925	$9,932,961	5.887	$11,817,923	5.651	$7,031,695	3.768
Option 3	$3,520,118	1.510	$5,822,975	2.264	$6,757,284	2.174	$2,585,808	1.449
Option 4	-$3,728,533	0.737	$993,371	1.105	$719,855	1.061	-$3,455,017	0.707
Option 5	-$2,651,066	0.797	$1,710,839	1.196	$1,616,816	1.148	-$2,557,043	0.766
Option 6	$637,196	1.678	$950,484	2.517	$1,109,252	2.416	$478,428	1.611

If costs fall and benefits rise by 20%, all projects become Net Present Value positive (BCR >1).

FAR NORTH WEST JOINT ORGANISATION

Table 9: Sensitivity to Negatively Correlated Benefit/Cost Variance

Scenario Option	Low Case Scenario NPV	 BCR	High Case Scenario NPV	 BCR
Base Case	-$234,286		-$156,190	
Option 1	$884,943	3.420	$1,632,084	7.696
Option 2	$6,523,542	3.140	$12,326,075	7.064
Option 3	$1,434,380	1.208	$7,908,713	2.717
Option 4	-$5,815,969	0.589	$3,080,808	1.326
Option 5	-$4,737,996	0.638	$3,797,768	1.435
Option 6	$321,784	1.342	$1,265,896	3.020

The Low Case Scenario assumes a cost increase of 20% and a benefit decrease of 20% with a social discount rate of 5%

The High Case Scenario assumes a cost decrease of 20% and a benefit increase of 20% with a social discount rate of 5%

9. Conclusions

This report contains the analysis of a range of remote regional drought projects using rapid cost benefit techniques. The conclusion is it is quite plausible for these projects to have benefit cost ratios greater than one, and would be recommended for a full cost benefit analysis as part of funding and approval processes.

FAR NORTH WEST JOINT ORGANISATION

Appendix: Cash Flow Tables

Cost Benefit Analysis Extended Report

*Please note that results displayed on this sheet aren't incremental to the base case

Base Year (financial)	0
Appraisal Start Year (financial)	0
Appraisal Length (years)	30
Discount Rate p.a.	5%

Base Case Results ($)

Cost Category	PV	Year:	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053
Water planning	$195,238		$100,000	$95,238	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Costs			**$100,000**	**$95,238**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

Benefit Category	PV	Year:	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053
Total Benefits			**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

Option 1 Results ($)

Cost Category	PV	Year:	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053
Groundwater	$499,908		$200,000	$0	$0	$0	$164,540	$0	$0	$0	$135,368	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Costs			**$200,000**	**$0**	**$0**	**$0**	**$164,540**	**$0**	**$0**	**$0**	**$135,368**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

Benefit Category	PV	Year:	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053
Water planning	$24,323		$3,000	$2,857	$2,721	$2,592	$2,468	$2,351	$2,239	$2,132	$2,031	$1,934	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Groundwater	$1,538,860		$0	$0	$226,757	$215,959	$205,676	$195,882	$186,554	$177,670	$169,210	$161,152	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Benefits			**$3,000**	**$2,857**	**$229,478**	**$218,551**	**$208,144**	**$198,232**	**$188,792**	**$179,802**	**$171,240**	**$163,086**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

Option 2 Results ($)

Cost Category	PV	Year:	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053
Telecommunications	$2,736,000		$2,736,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Costs			**$2,736,000**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

Benefit Category	PV	Year:	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053
Telecommunications	$615,544		$0	$0	$90,703	$86,384	$82,270	$78,353	$74,622	$71,068	$67,684	$64,461	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Health benefits	$3,137,631		$0	$0	$200,577	$191,026	$181,929	$173,266	$165,015	$157,157	$149,674	$142,546	$135,758	$129,294	$123,137	$117,273	$111,689	$106,370	$101,305	$96,481	$91,887	$87,511	$83,344	$79,375	$75,595	$71,996	$68,567	$65,302	$62,192	$59,231	$56,410	$53,724
General comms benefits	$1,748,047		$0	$0	$111,746	$106,425	$101,357	$96,530	$91,934	$87,556	$83,387	$79,416	$75,634	$72,032	$68,602	$65,336	$62,224	$59,261	$56,439	$53,752	$51,192	$48,754	$46,433	$44,222	$42,116	$40,110	$38,200	$36,381	$34,649	$32,999	$31,428	$29,931
Statewide comms benefits	$6,464,349		$0	$0	$413,241	$393,563	$374,822	$356,973	$339,975	$323,785	$308,367	$293,683	$279,698	$266,379	$253,694	$241,614	$230,108	$219,151	$208,715	$198,776	$189,311	$180,296	$171,710	$163,534	$155,746	$148,330	$141,267	$134,540	$128,133	$122,031	$116,220	$110,686
Total Benefits			**$0**	**$0**	**$816,267**	**$777,397**	**$740,378**	**$705,122**	**$671,545**	**$639,567**	**$609,111**	**$580,106**	**$491,090**	**$467,705**	**$445,434**	**$424,222**	**$404,021**	**$384,782**	**$366,459**	**$349,009**	**$332,389**	**$316,561**	**$301,487**	**$287,130**	**$273,458**	**$260,436**	**$248,034**	**$236,223**	**$224,974**	**$214,261**	**$204,058**	**$194,341**

Option 3 Results ($)

Cost Category	PV	Year:	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053
Offstream Storage	$5,952,381		$5,000,000	$952,381	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Costs			**$5,000,000**	**$952,381**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
Benefit Category	**PV**	**Year:**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**	**2041**	**2042**	**2043**	**2044**	**2045**	**2046**	**2047**	**2048**	**2049**	**2050**	**2051**	**2052**	**2053**
Offstream Storage	$10,428,689		$0	$0	$666,667	$634,921	$604,686	$575,892	$548,468	$522,351	$497,477	$473,788	$451,226	$429,739	$409,276	$389,786	$371,225	$353,548	$336,712	$320,678	$305,408	$290,864	$277,014	$263,823	$251,260	$239,295	$227,900	$217,048	$206,712	$196,869	$187,494	$178,566
Total Benefits			**$0**	**$0**	**$666,667**	**$634,921**	**$604,686**	**$575,892**	**$548,468**	**$522,351**	**$497,477**	**$473,788**	**$451,226**	**$429,739**	**$409,276**	**$389,786**	**$371,225**	**$353,548**	**$336,712**	**$320,678**	**$305,408**	**$290,864**	**$277,014**	**$263,823**	**$251,260**	**$239,295**	**$227,900**	**$217,048**	**$206,712**	**$196,869**	**$187,494**	**$178,566**

Option 4 Results ($)

Cost Category	PV	Year:	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052
Weir Raising	$12,000,000		$12,000,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Costs			**$12,000,000**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
Benefit Category	**PV**	**Year:**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**	**2041**	**2042**	**2043**	**2044**	**2045**	**2046**	**2047**	**2048**	**2049**	**2050**	**2051**	**2052**	**2053**
Weir Raising	$10,437,181		$0	$667,210	$635,438	$605,179	$576,361	$548,915	$522,776	$497,882	$474,173	$451,594	$430,089	$409,609	$390,104	$371,527	$353,835	$336,986	$320,939	$305,656	$291,101	$277,239	$264,037	$251,464	$239,490	$228,085	$217,224	$206,880	$197,029	$187,646	$178,711
Total Benefits			**$0**	**$667,210**	**$635,438**	**$605,179**	**$576,361**	**$548,915**	**$522,776**	**$497,882**	**$474,173**	**$451,594**	**$430,089**	**$409,609**	**$390,104**	**$371,527**	**$353,835**	**$336,986**	**$320,939**	**$305,656**	**$291,101**	**$277,239**	**$264,037**	**$251,464**	**$239,490**	**$228,085**	**$217,224**	**$206,880**	**$197,029**	**$187,646**	**$178,711**

Option 5 Results ($)

Cost Category	PV	Year:	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053
Offstream Storage	$11,100,000		$11,100,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Costs			**$11,100,000**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
Benefit Category	**PV**	**Year:**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**	**2041**	**2042**	**2043**	**2044**	**2045**	**2046**	**2047**	**2048**	**2049**	**2050**	**2051**	**2052**	**2053**
Offstream Storage	$10,434,648		$0	$0	$667,048	$635,283	$605,032	$576,221	$548,782	$522,649	$497,761	$474,058	$451,484	$429,985	$409,509	$390,009	$371,437	$353,750	$336,904	$320,861	$305,582	$291,031	$277,172	$263,973	$251,403	$239,432	$228,030	$217,172	$206,830	$196,981	$187,601	$178,668
Total Benefits			**$0**	**$0**	**$667,048**	**$635,283**	**$605,032**	**$576,221**	**$548,782**	**$522,649**	**$497,761**	**$474,058**	**$451,484**	**$429,985**	**$409,509**	**$390,009**	**$371,437**	**$353,750**	**$336,904**	**$320,861**	**$305,582**	**$291,031**	**$277,172**	**$263,973**	**$251,403**	**$239,432**	**$228,030**	**$217,172**	**$206,830**	**$196,981**	**$187,601**	**$178,668**

Option 6 Results ($)																															
Cost Category	**PV**	**Year:**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**	**2041**	**2042**	**2043**	**2044**	**2045**	**2046**	**2047**	**2048**	**2049**	**2050**	**2051**	**2052**	**2053**
Cabar Water Reuse Facility	$500,000		$500,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Cobar Water Reuse Operating	$478,458		$0	$30,095	$28,662	$27,297	$25,997	$24,759	$23,580	$22,458	$21,388	$20,370	$19,400	$18,476	$17,596	$16,758	$15,960	$15,200	$14,476	$13,787	$13,130	$12,505	$11,910	$11,343	$10,802	$10,288	$9,798	$9,332	$8,887	$8,464	$8,061	$7,677
Total Costs			**$500,000**	**$30,095**	**$28,662**	**$27,297**	**$25,997**	**$24,759**	**$23,580**	**$22,458**	**$21,388**	**$20,370**	**$19,400**	**$18,476**	**$17,596**	**$16,758**	**$15,960**	**$15,200**	**$14,476**	**$13,787**	**$13,130**	**$12,505**	**$11,910**	**$11,343**	**$10,802**	**$10,288**	**$9,798**	**$9,332**	**$8,887**	**$8,464**	**$8,061**	**$7,677**
Benefit Category	**PV**	**Year:**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**	**2041**	**2042**	**2043**	**2044**	**2045**	**2046**	**2047**	**2048**	**2049**	**2050**	**2051**	**2052**	**2053**
Avoided Water Cost	$1,577,060		$0	$0	$100,815	$96,015	$91,443	$87,088	$82,941	$78,992	$75,230	$71,648	$68,236	$64,987	$61,892	$58,945	$56,138	$53,465	$50,919	$48,494	$46,185	$43,985	$41,891	$39,896	$37,996	$36,187	$34,464	$32,823	$31,260	$29,771	$28,353	$27,003
Total Benefits			**$0**	**$0**	**$100,815**	**$96,015**	**$91,443**	**$87,088**	**$82,941**	**$78,992**	**$75,230**	**$71,648**	**$68,236**	**$64,987**	**$61,892**	**$58,945**	**$56,138**	**$53,465**	**$50,919**	**$48,494**	**$46,185**	**$43,985**	**$41,891**	**$39,896**	**$37,996**	**$36,187**	**$34,464**	**$32,823**	**$31,260**	**$29,771**	**$28,353**	**$27,003**

FAR NORTH WEST
JOINT ORGANISATION

Belinda Colless

Regional Drought Resilience Plan Officer
Far North West Joint Organisation
RDRP – 04 (Cobar, Bourke, Brewarrina and Walgett)

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