



**Drought
Ready
Tasmania**

**Drought Risk,
Resilience &
Adaptive
Capacity Data**



RMCG


Australian Government
Department of Agriculture,
Fisheries and Forestry

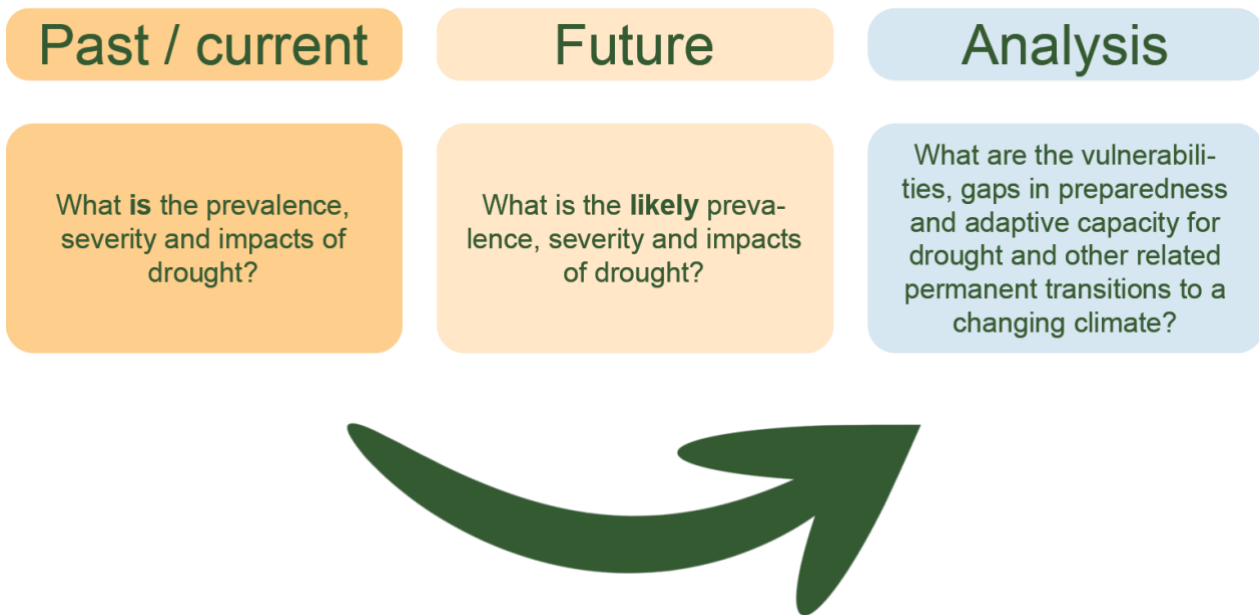


Future
Drought
Fund


Tasmanian
Government

Purpose

The purpose of this report is to provide a snapshot in time of the indicative and potential drought impacts for the Northern region of Tasmania. It answers the following three questions.



The Northern region drought data report will support the engagement activities of the Regional Project Coordinator and underpin the development of the Regional Drought Resilience Plan for northern Tasmania with regional stakeholders. This summary report is accompanied by a detailed full report, which includes all data sources and references.

Drought resilience is 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. This report analyses the resilience of agricultural, natural environment and community systems to drought.

The Northern Region

Agriculture and community

Northern Tasmania has a land area of 20,116 km², a population of just over 150,000 and is comprised of the following Local Government Areas (LGAs): Break O’Day; Dorset; Flinders; George Town; Launceston; Meander Valley; Northern Midlands; West Tamar.

Compared to Tasmania as a whole, households in the Northern region are skewed towards the lower end of household incomes, people tend to be less educated, slightly older and more likely to need care. West Tamar has the least level of disadvantage of the Northern region LGAs while people within the George Town LGA demonstrate the most disadvantage.

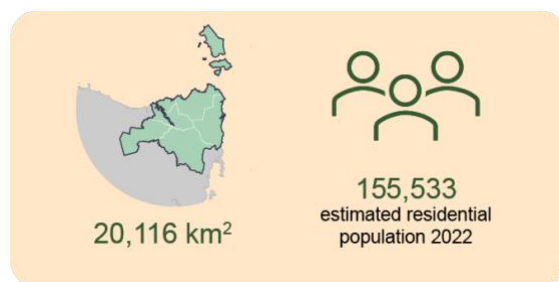


Figure S-1: Northern area and population

There are large areas of modified land in the region. Within these there are distinct areas of prime agricultural land.

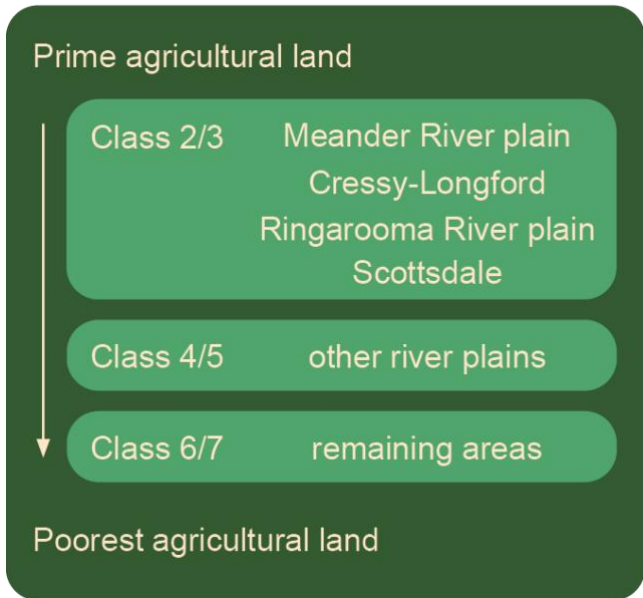


Figure S-2: Prime agricultural land

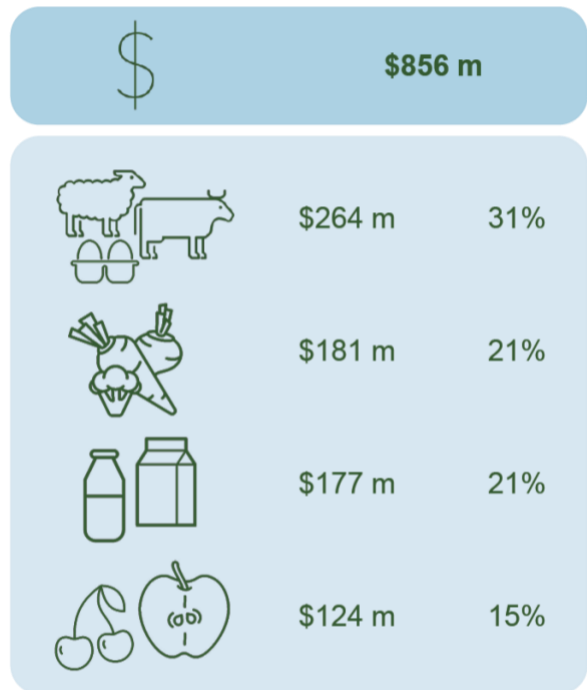
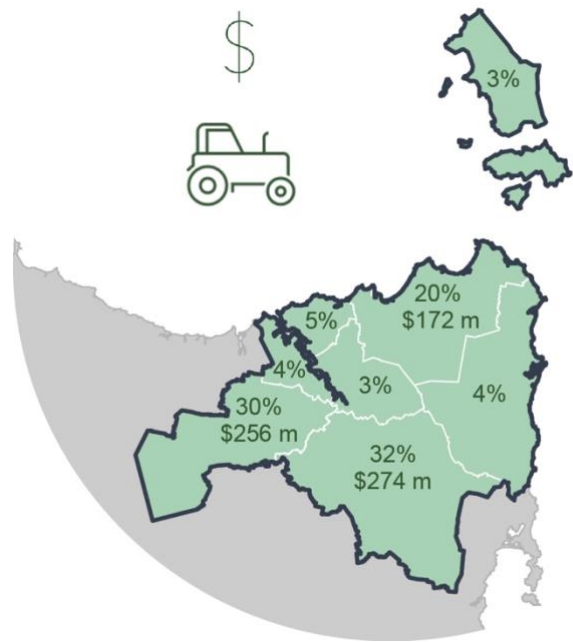


Figure S-4: Regional agricultural output

The Northern Midlands, Meander Valley and Dorset account for 81% of the region’s agricultural output. Livestock products (including dairy) and vegetables make up approximately 72% of the value of agricultural enterprises within the Northern Tasmanian region, with fruit an additional 15%.

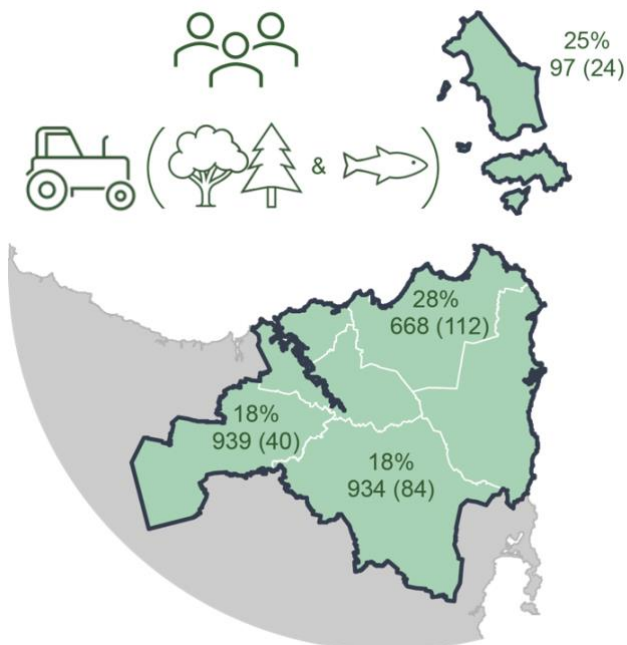


Figure S-3: Agricultural workforce per LGA (forestry and fisheries in brackets)

Between 18-28% of the population in Dorset, Flinders, Northern Midlands and Meander Valley LGAs work in primary industry. There are almost 1,000 people employed in agriculture alone in both the Meander Valley and Northern Midlands LGAs, with almost 700 in Dorset LGA.

Natural environment

Half of Tasmania’s internationally listed (Ramsar) wetlands are in the Northern region. The region spans 16 catchments - 12 catchments wholly within its boundaries and 4 partially within the region.



Figure S-5: Regional catchments and Ramsar wetlands

Outside the areas of modified land are vegetation communities including dry eucalypt forest, native grasslands, wet eucalypt forest and woodland, rainforest and in the coastal or elevated regions, areas of scrub, heathland and coastal complexes.

There are threatened ecological communities in the region.



Figure S-6: Threatened ecological communities

Parts of the Tasmanian Wilderness World Heritage Area sit within the Meander Valley LGA.

Past climate trends

Droughts occurred in the Northern region of Tasmania in 2006, 2015 and 2019. These events offer insights on the impacts to agriculture and the natural environment, and the potential resilience of communities to future droughts.

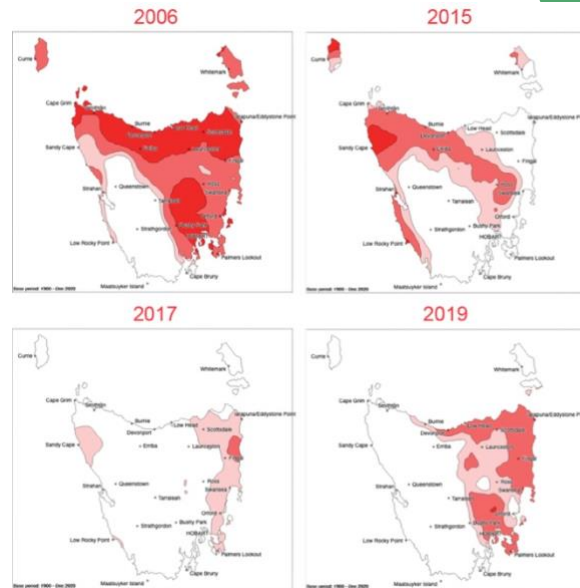


Figure S-7: Past low rainfall years (indicated in red, dark red is lowest on record)

Evapotranspiration is an indicator incorporating both water availability and temperature. Increased evapotranspiration needs to be balanced with increased rainfall to avoid water deficit.

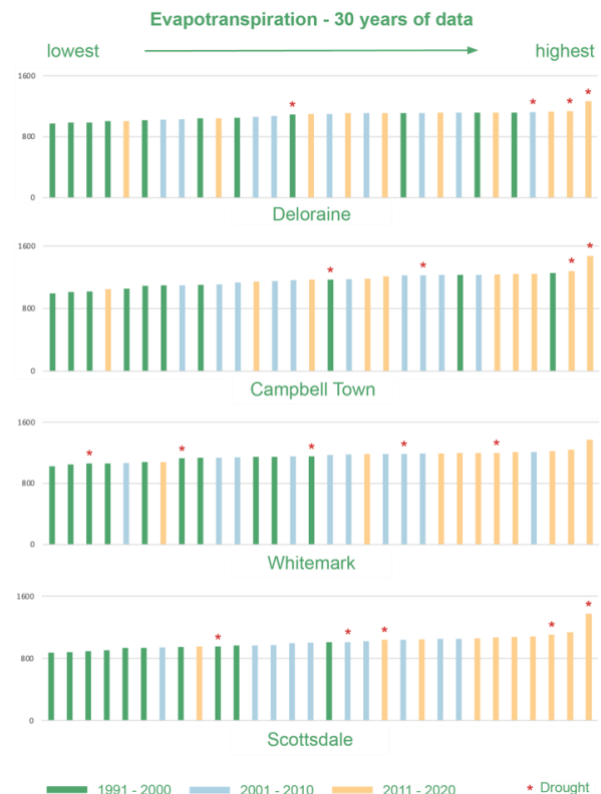


Figure S-8: Evapotranspiration over 30 years (mm, drought years marked with red asterisk)

There appears to be increasing evapotranspiration across the four Bureau of Meteorology sites examined in this report when viewed by decade.

Projected climate changes

While the modelled 2070 rainfall may decrease overall, the fewer rainfall events that do occur are likely to be more intense.

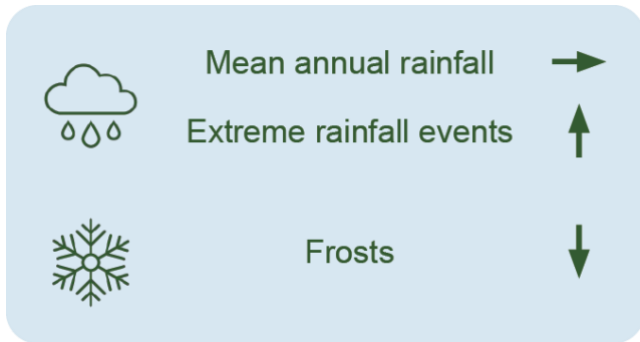


Figure S-9: Projected climatic change trends

Four key northern towns were examined for climate variables: Campbell Town (Northern Midlands LGA), Deloraine (Meander Valley LGA), Scottsdale (Dorset LGA) and Whitemark (Flinders LGA).

Days over 30°C and average temperatures are predicted to increase by 2070.

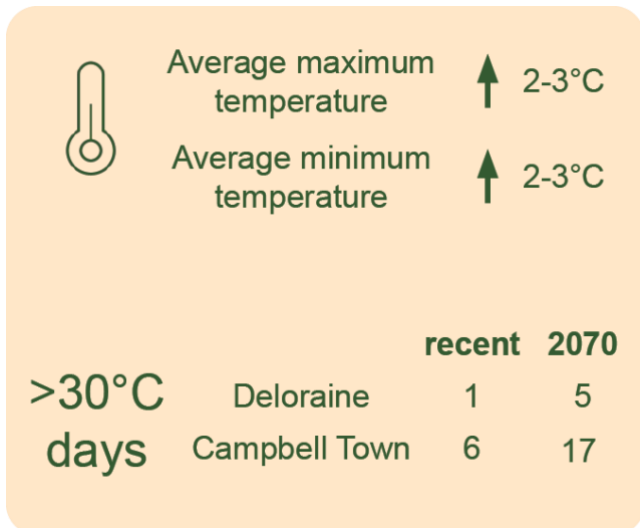


Figure S-10: Projected temperature changes (number of days over 30°C)

Overall average regional summer soil moisture is predicted to decrease in 2070.

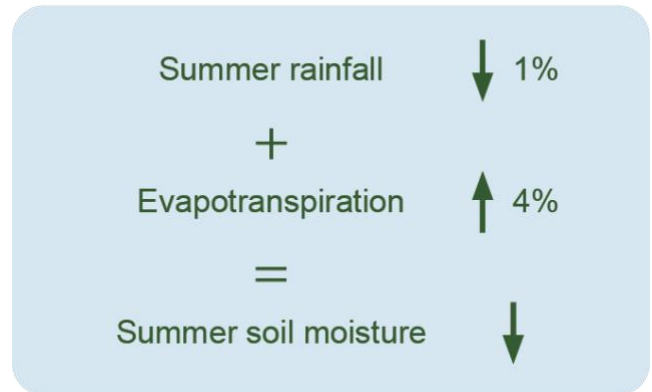


Figure S-11: Projected summer soil moisture changes

While there is predicted to be increased water availability in north eastern, eastern and midlands catchments, not all Northern region catchments are expected to experience this.



Figure S-12: Projected catchment level changes

Risk, adaptive capacity and resilience

Drought resilience was determined by analysing the potential drought impact (risk) and adaptive capacity of each of the eight LGAs in the Northern region. This showed Meander Valley had higher adaptive capacity potential to drought, whereas George Town displays lower adaptive capacity to drought. The potential drought impact (risk) showed Flinders with higher risk rating, while City of Launceston was lower based on the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) Community Vulnerability & Resilience to Drought Index (CVRDI). The potential vulnerability of LGAs in the Northern region to drought impacts are on the lower end of the index.

Therefore, the Northern region has moderate resilience to manage future drought conditions (Figure S-13). Flinders and George Town LGAs have lower resilience to drought and Launceston and West Tamar LGAs have higher resilience to drought. However, it is important to note that climate change will increase the frequency, severity and duration of extreme events such as periods of intense heat or rainfall. While the drought risk may be projected to moderately increase in most of Northern Tasmania, it is going to be one of many factors that land managers and communities need to prepare for and respond to in the future.

Agriculture, forestry, and fisheries are major drivers of the economy in the Northern region, both in terms of value-adding and employment. As the climate continues to change these industries need to continue to adapt and transform to ensure they are resilient to drought and other changes in climate.

Climate change is already impacting on agriculture and the natural environments and communities on which it relies. If communities can increase their adaptive capacity and resilience to future drought events, then it will also assist in increasing their resilience to other extreme events. It is important to note that more frequent, longer duration and severe droughts may reduce adaptive capacity.

Much work has been done and continues to provide secure water supplies for agriculture in the region, through irrigation schemes and individual landowner investments in storage dams. In general, the region also has a high diversity of agricultural enterprises, both at the property and regional levels. These are two important factors that assist with the region's existing resilience to drought. The development of the Regional Drought Resilience Plans will help to identify regional needs, priorities and challenges and inform future investment to improve economic, social and environmental resilience to drought.

Legend

 Region

Drought Resilience Ranking

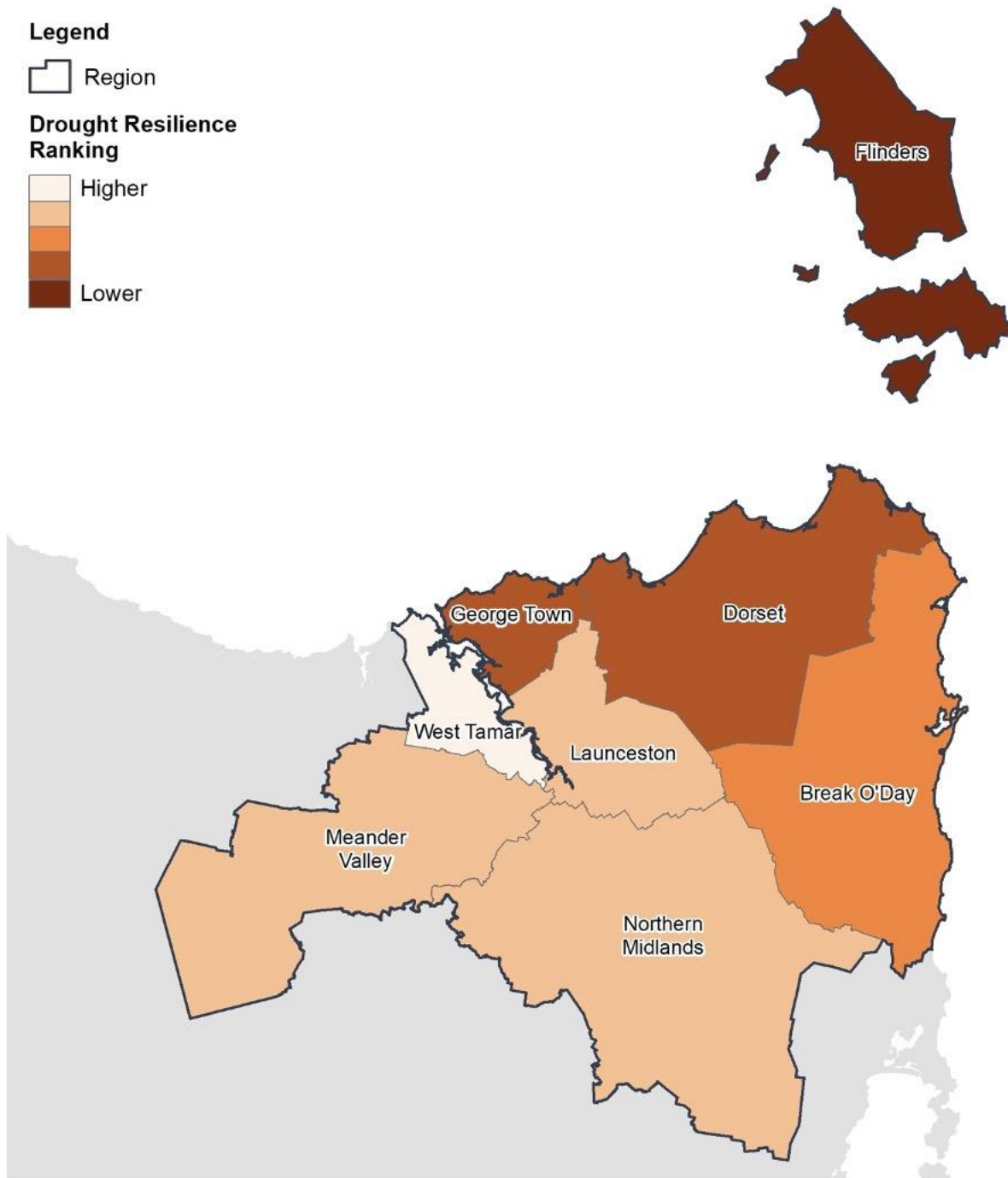
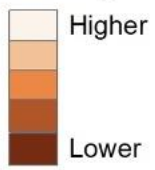


Figure S-13: Drought resilience of Northern region LGAs

Recommendations

Based on the key findings in this report the following recommendations have been identified.

Table S-1: Recommendations

Theme	Recommendation
Use this report to inform community engagement undertaken by the Regional Project Coordinator	<ol style="list-style-type: none"> 1. Test the risk, adaptive capacity and resilience to drought findings by LGA with the community to see if it reflects on-ground experience to past events. 2. Investigate the My Climate View forecast data as a tool to support further community engagement, which explores future climate predictions for individual towns and provides a specific snapshot of how conditions will change in the coming years.
Utilise the data in this report to inform the development of the Regional Drought Resilience Plan	<ol style="list-style-type: none"> 3. Undertake win-win, no regrets actions to assist with short to medium-term adaptation to future drought conditions (i.e. avoid maladaptation). 4. Ensure the Regional Drought Resilience Plan develops long-term transformative actions that consider all five capitals; physical, natural, financial, human and social. 5. Prioritise action in those communities with lower resilience by building adaptive capacity and reducing vulnerability to potential impacts of drought. This includes Flinders and George Town LGAs in the Northern region. 6. Continue to develop irrigation schemes where feasible that balance environmental water needs. This is a priority in Tamar & Northern Midlands areas. 7. Work with land managers to continue to improve and diversify their agricultural operations to be more adaptable to changing climatic conditions as well as extreme climate events (such as drought). This will have broader benefits for agriculture, the natural environment and communities. For example, this may include sustainable agriculture practices that improve soil health through increasing organic matter inputs and reducing losses for greater soil moisture retention. 8. Build technical literacy in regions to enable land managers to utilise current and emerging technology to better plan and prepare for changes in seasonal conditions. 9. Ensure actions consider community health, including mental health, as important aspects of resilience. Be aware that rates of mental health disorders are likely to be higher than are reported.
Undertake monitoring, evaluation, reporting and learning (MERL) for the Regional Drought Resilience Plan	<ol style="list-style-type: none"> 10. Establish clear, measurable and robust indicators of drought resilience in the Regional Drought Resilience Plan, informed by this report and emerging best-practice research. 11. Monitor drought resilience over time and update the Regional Drought Resilience Plan as required, including supporting data.



Drought Ready Tasmania

For further info contact:

Regional Drought Resilience

✉ resilience@dpac.tas.gov.au

☎ +61 3 6232 7884

Register to have your say

Scan the QR code or visit droughtready.tas.gov.au



Australian Government
Department of Agriculture,
Fisheries and Forestry



Future
Drought
Fund



The Regional Drought Resilience Planning Program is jointly funded through the Australian Government's Future Drought Fund and the Tasmanian Government.

© 2023 State of Tasmania. Version 1 (10/2023) 230058