

**Submission  
No 12**

## **FOOD PRODUCTION AND SUPPLY IN NSW**

**Organisation:** Bureau of Meteorology

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## **About the Bureau**

The Bureau of Meteorology (the Bureau) is the agency responsible for providing trusted, reliable and responsive weather, water, climate, ocean and space weather services for Australia. Its expertise and services assist Australians in dealing with the realities of their natural environment, including drought, floods, fires, storms, tsunami and tropical cyclones. Through regular forecasts, warnings, monitoring and advice spanning Australia and its territories, the Bureau provides one of the most fundamental and widely-used services of government.

The Bureau contributes to national social, economic, cultural and environmental goals by providing observational, meteorological, hydrological, oceanographic and space weather services and by undertaking research into science and environment related issues in support of its operations and services.

The Bureau provides the agriculture industry with a range of services from real-time observations through to projections of future climate out to the end of the century. Observations, hazard warnings (such floods and thunderstorms) and 1-7 days forecasts support efficient and safe agricultural operations. This includes informing expensive decisions such as when to apply chemicals and fertiliser, or when to wait a few more days for a crop to fully ripen or to harvest it ahead of incoming rain. Seasonal forecasts inform farm planning decisions to maximise production in the good years and avoid costly losses in the bad. These services are utilised beyond the farmgate, influencing agricultural commodity markets and transport logistics. The Climate Services for Agriculture Program, detailed in the submission below, is tailoring these traditional services for specific commodities and regions while also expanding into decadal forecasts to inform long-term decisions such as land purchases and planning.

## **Focus of the submission**

This submission to the New South Wales Parliament's *Inquiry into Food Production and Supply in NSW* outlines key Bureau services and new initiatives that support Australian agriculture and the broader food production sector to respond to current environmental conditions and prepare for future conditions. These initiatives include improving accessibility of observations and analysis of current climate conditions, ongoing improvements to weather and climate forecasts, and building resilience to extreme weather. The submission also outlines the Bureau's national water information functions which support the sustainable management of Australia's water resources.

The Bureau's Strategic Plan identifies a critical objective to deliver "Products and services that benefit the Australian community and drive competitive advantage for businesses and industries." This includes the agriculture sector and those industries and communities that are connected to it. As such, the Bureau is supporting outcomes relevant to the following items of the Terms of Reference:

### **1. Improving food security and equitable access to food**

The Bureau's services are utilised extensively to maintain efficient and sustainable food production in Australia. They inform what and when to plant, when to purchase and apply expensive inputs such as chemicals and fertiliser, when to harvest and when to store or sell produce. Beyond the farmgate the Bureau's services are used to minimise disruption of natural hazards to transport networks. They are used by government in developing policies to build resilience in the agriculture sector and when deciding to step in and provide support during natural disasters.

Australia's food production continues to increase despite having one of the most variable climates in the world, and the agriculture sector is well on its way to achieving its goal of being a \$100 billion sector by 2030. The Bureau's weather, water and climate services contribute to that productivity and resilience.

The Bureau is working on several initiatives to improve the services it provides to the agriculture sector and those industries that support it. These initiatives include extension of our weather radar network, with three new sites commissioned or under construction across NSW, plus development of new products tailored to the needs of stakeholders from the agriculture sector, water authorities, rural councils and related agencies.

#### **4. Preserving productive land and water resources**

The Bureau's national water information services are used for efficient water and land management, for warning of emerging water security challenges, for decisions on new water infrastructure, to provide an evidence base for water policy, and to inform decisions by water users. In particular, the Bureau's water information products provide the agriculture sector and supporting industries with an understanding of water availability in storages, streams, aquifers and in the soil, in the past, present and future. These services allow the identification of risks and opportunities for food production at daily to decadal timescales.

The Bureau is developing a new water information website for the Murray–Darling Basin, which is being designed to address user-needs and will provide more timely and complete information on water availability, use, quality and price. [Version one](#) of the portal was publicly released in June 2021. The final version is scheduled for release by December 2023. It is being developed in partnership with the Department of Agriculture, Water and the Environment, the Murray-Darling Basin Authority and the relevant state governments including NSW.

In late 2021, the Bureau released the [Australian Water Outlook](#), which provides insights on long-term changes to water resource availability (out to 2100) under different climate change scenarios, using an ensemble of downscaled climate models. This service will aid policymakers to develop sustainable land and water use policies, and food producers to build resilient and productive businesses.

Further information on the Bureau's water services is available at: [Water Information: Bureau of Meteorology \(bom.gov.au\)](#)

#### **5. Managing the impact of climate change**

Funded by the Australian Government's Future Drought Fund, the Climate Services for Agriculture Program is delivering tailored information through an interactive, digital platform designed to support the agriculture sector to increase its productivity and resilience.

The program is being delivered jointly by the Bureau and CSIRO. It will deliver regional-scale climate projections across Australia, through a user-friendly, fit-for-purpose digital platform, enabling farmers to access climate insights that will help them anticipate and plan for the impacts of a variable and changing climate.

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A total of eight pilot regions are being established to engage users in the co-design of information products and decision support tools, including regions in Central West New South Wales and the Riverina.

A prototype of the public website was launched in June 2021 available at [climateservicesforag.indraweb.io](https://climateservicesforag.indraweb.io), and will be further developed, with updates, until June 2023.

The Drought Resilience Self-Assessment tool (DRSAT), available at [www.drsat.com.au](http://www.drsat.com.au), is being developed alongside Climate Services for Agriculture. DRSAT will enable farmers to combine their own data with information from the Climate Services for Agriculture digital platform to generate farm-scale insights regarding individual levels of drought resilience and opportunities to improve it. The Bureau is working closely with the DRSAT program in collaboration with the Department of Agriculture, Water and the Environment.

Further information on Climate Services for Agriculture is available at: [Climate Services for Agriculture - DAWE](#)