



Position paper (summary): The National Agri-Climate Program

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Executive Summary

The Northern Australia Climate Program (NACP) continues to deliver innovative research, development, extension and adoption (RDE&A) outcomes that strengthen the red meat industry's capacity to manage drought and climate risk across northern Australia.

Building on this proven success, we propose expanding and rebranding **NACP as the National Agri-Climate Program**, a cross-commodity, collaborative RDE&A program designed to improve climate resilience and productivity across Australia's agricultural sectors. This national expansion aligns with MLA's Strategic Plan 2025 priorities to "enhance productivity and resilience for producers and the supply chain", while also advancing MLA's Our Environment objectives set out in *Red Meat 2030*.¹

Over three iterations, NACP has achieved the following outcomes:

- Improved the accuracy of the Bureau of Meteorology's seasonal dynamical prediction system;
- Developed and maintained industry-driven climate tools and tailored forecast products;
- Delivered a globally recognised extension and adoption service that has improved the capacity of producers to make informed decisions to strengthen climate resilience and mitigate the inherent risks associated with climate variability

These achievements have translated into measurable economic, environmental and social benefits at the farm scale. With climate challenges expected to intensify, there is an urgent opportunity to leverage the successful NACP framework and scale it nationally to deliver a "bigger and bolder" RDE&A program led by UniSQ and co-designed with industry partners.

A National Agri-Climate Program will leverage ongoing MLA investment and NACP partnerships to:

- Expand the proven RDE&A framework nationally (southern regions, new commodities)
- Operationalise climate tools and services with program delivery partners
- Address emerging industry needs related to drought, climate extremes, climate change, and machine learning in prediction

¹ <https://www.flipsnack.com/BBB766ED75E/red-meat-2030-vt5ofslpma/full-view.html>

Project Capability and Delivery Experience

MLA's investment in NACP (2017–2026) has delivered a robust and transferable framework, with proven tools and methodologies ready for national expansion.

Research

- Improved the Bureau's seasonal forecasting system, reducing biases and improving prediction accuracy
- Delivered new insights into historical climate events that directly affected livestock production, which in turn has led to tailored forecast product development.

Development

- Developed and maintained tailored forecast and monitoring products:
 - Northern Rainfall Onset, 3-day Rainfall Chance, updated climatology maps associated with intraseasonal variability (all operational on Bureau's climate page)
 - Prototype cattle thermal stress and drought products
- Advanced forecast display design to better communicate uncertainty and bridge weather–climate timescales

Extension & Adoption

- The "Climate Mates" model has delivered measurable practice change: awareness, knowledge, skills, and adoption tracked through HubSpot Customer Relationship Management tool.
- Produced MLA's Profitable Grazing Systems supported learning package "Climate for Decision Making"

Demonstrated Value

- Up to \$22/head farm-scale improvement from NACP adoption
- GDP-level benefits: drought and flood costs avoided or mitigated
- Increased producer trust and confidence in Bureau forecasts and messaging

Opportunities for National Expansion and building Climate Resilience Capacity

Climate variability and weather extremes (droughts, floods, heatwaves) are intensifying with significant national-scale economic and environmental consequences. Producers across Australia are increasingly turning to trusted, operational, and locally relevant climate services to manage these risks effectively.

The current gaps that have been identified by NACP are:

- Absence of a national drought early warning and monitoring service
- Limited operationalisation of thermal stress forecast tools of relevance to livestock
- Insufficient producer-focused climate change projections
- Emerging opportunities to leverage machine learning for next-generation climate forecasting

Proposed National Agri-Climate Program (2026–2030)

The proposed National Agri-Climate Program will be led by UniSQ in partnership with the Bureau of Meteorology, MLA, DCAP, DPI Qld, and various commodity groups and NRMs. The scope of the expanded program is for national RDE&A coverage that extends from northern Australia to southern regions (NSW, VIC, SA, TAS, ACT, southern WA). Cross-commodity reach includes red meat, dairy, grains, horticulture, and forestry.

The Core Pillars of the National Agri-Climate Program will be:

1. **Research** – climate extremes, drought, chill/heat stress, climate change projections, machine learning forecasts → increasing accuracy of weather and climate prediction
2. **Development** – operationalise prototype products, ensemble approaches, user-driven tools, and develop new agricultural risk-based indices.
3. **Extension & Adoption** – expand Climate Mates nationally, embed in industry networks, accredited training and internships to build capacity.

The co-design of the program will be in consultation with the Bureau of Meteorology and key industry and commercial partners to deliver

- Clear service-level metrics (e.g., uptime, latency, update cadence, forecast skill)
- Improve performance standards reported to MLA
- A secure, cloud-based architecture that will incorporate
 - compliance controls
 - role-based access
 - audit logging
 - proactive maintenance
 - documented business continuity and disaster recovery procedures

Adoption will be supported by a tiered training and user-support framework that includes accredited modules, a knowledge base, and help-desk capability to ensure consistent use across regions and commodities. All tools will use open APIs and interoperability standards to integrate with agri-tech platforms, and follow a consistent, accessible user-experience design across web and mobile.

Expected Outcomes

For Producers

- Improved on-farm decisions, productivity, and climate resilience
- Increased profitability: value of forecasts measured per head and per enterprise

For MLA and the Red Meat Industry

- Delivers on *Red Meat 2030* “Our Environment” objectives
- Aligns with MLA’s Sustainability Strategy post-Round Table
- Strengthens MLA’s leadership in climate resilience, adaptation and industry sustainability

For Australia

- Reduced GDP losses from droughts and extreme events
- Triple bottom line impact: economic, environmental, social
- A skilled, climate-resilient workforce through training and research pathways

Timeline & Next Steps

- First step (EOI stage): MLA engagement to co-design scope, partnerships, and operationalisation pathways
- 2026: transition from Northern Australia Climate Program to National Agri-Climate Program
- 2026–2030: phased expansion nationally and across commodities
- Annual milestones: new operational tools, extension network expansion, national reporting of adoption and impact

Conclusion

The National Agri-Climate Program builds directly on the proven success of the Northern Australia Climate Program and 10 years of MLA investment. It represents a scalable, operational, and collaborative model that is ready to deliver across multiple agri-sectors. By expanding to southern regions, engaging new commodities, and embedding operational climate services the project will leverage established partnerships and trusted networks to strengthen the resilience of Australian agriculture to climate variability and long-term changes.

This bigger, bolder, and broader initiative will continue MLA's core investment in NACP to deliver economic, environmental, and social benefits aligned with MLA’s strategic objectives and Red Meat 2030 targets. With UniSQ’s leadership and strong stakeholder support, the expanded program aims to provide a powerful pathway to future-proof Australia's agricultural industries, landscapes, and communities to increasing climate risk.