Australian Government

Australian Grape and Wine Authority

Wine Australia

Opportunities for investment in the priority area of climate adaptation

The Australian Grape and Wine Authority Strategic Plan 2015–20 identifies climate adaptability as a priority research and development (R&D) topic for the Australian wine sector. adaptation

Background

One of our key strategic priorities is to increase the competitiveness of the Australian grape and wine community. Increasing competitiveness is about more than reducing costs – it is about using all of our resources to create and embrace new opportunities.

Management strategies to deal with the challenges of short-term climate cycles and long-term climate change in the vineyard have been identified as a priority for R&D investment in 2016–17. This is because climate change is one of the challenges faced by grapegrowers and winemakers that ultimately has the potential to impact on competitiveness.

This paper considers the current situation and opportunities for new R&D investment in climate adaptability.

Current situation

The United Nations Framework on Climate Change[1] defines climate adaptation as:

> '*Adaptation refers to adjustments in ecological, social, or economic systems in response to actual or expected climatic stimuli and their effects or impacts. It refers to changes in processes, practices, and structures to moderate potential damages or to benefit from opportunities associated with climate change.*'

Climate change is already impacting the grape and wine community and some adaptation had already occurred. Vulnerability to the impacts of climate change varies along the value chain, with the vineyard being the most vulnerable. Some of the adaptation responses in vineyards have included:

- Increasing irrigation efficiency
- Modifying irrigation practices in response to heatwaves and frosts
- Opting for vineyard floor management practices that retain soil moisture
- Using alternative varieties and/or rootstocks
- Modifying canopy management practices
- Purchasing or establishing vineyards in cooler regions and/or sourcing cooler climate fruit
- Using pruning to manipulate harvest dates.

Our past research investment and that by one of our precursor organisations, the Grape and Wine Research and Development Corporation, has provided much of the knowledge behind these adaptation responses. Our current R&D investment continues to inform these practice changes in the vineyard and includes the following projects:

[1] United Nations Framework on Climate Change, http://unfccc.int/focus/adaptation/items/6999.php. Accessed 29 September 2015.

- CSP 1302: Genetic and mechanistic characterisation of rootstock traits conferring abiotic stress tolerance to grapevines
- CSP 1304: New rootstocks for Australian conditions
- DPI 1202: Impact of elevated CO_2 and its interaction with elevated temperature on production and physiology of Shiraz
- SAR 0902: Managing vineyards rootzone salinity and maximising water saving by sub-surface irrigation techniques
- SAR 1302: Managing the impacts of climate change rainfall decline on vine balance and root activity
- SAR 1303: Assessing clonal variability in Chardonnay and Shiraz for future climate change
- SAR 1304: Cost-effective viticultural strategies to adapt to a warmer, drier climate
- UA 1304: Translation of 'Whole-of-Production-Chain' Wine Science Research to Industry Outcomes (opportunities for lower alcohol)

Brief summaries of these current projects are available on our website and can be accessed by clicking on the hyperlinked project codes. Some of these projects will be completed before or in 2016–17, the year we envisage new projects starting, whereas others will still be active.

Opportunities for new R&D investment

For this funding round, we are seeking projects that focus on viticultural treatments to manage the effects of climate change. These projects should build on international research and our current projects, particularly those that will be finalised by July 2016. Some of the questions for which we are seeking answers are:

- What are the best ways to manage compressed harvests and, more generally, changes to grape berry ripening patterns?
- What are the additional advances in water use efficiency and irrigation management that can be made?
- What is the long term impact of accumulated heat on grapevines, especially from repeated heatwaves and how should this be best managed?
- What has been the historical economic and grape and wine quality impact of shorter term (such as El Niño-Southern Oscillation) and longer term (such as Pacific Decadal Oscillation) climate cycles for Australian vineyards? How do the current adaptation strategies mitigate against these impacts and what insights can be gained from past?

The impact of new and proposed management techniques on fruit and wine quality should be included in project proposals if possible.

Next steps

We are seeking preliminary project proposals for projects to start from July 2016 that address the above questions. The criteria used to assess proposals can be downloaded here.

Applications are submitted online through our Clarity Investment Management System (CIMS). If you have not used CIMS before, please contact us at applications@wineaustralia.com for a username, password and 'how to' guide.

Key dates

Preliminary Project Applications (PPAs) due	Friday 6 November 2015
Final Project Applications (FPAs) invited	Friday 18 December 2015
FPAs due	Monday 22 February 2016
Applicants advised	late April 2016
Contracting	May 2016
Projects start	July 2016