

Regional climate guides put data in the hands of farmers

■ By Kate Langford

BOM, CSIRO and Farmlink have combined their expertise to develop climate guides for Australia's 56 Natural Resource Management (NRM) regions. When Simon Allen from CSIRO visited Broken Hill in Western NSW, local graziers told him an interesting story about how they'd changed their farming practices to adapt to observed changes in the climate.

In years gone by, the locally accepted practice was to 'let the rams out' on Valentine's Day to impregnate the ewes. But for the past few years, farmers have noticed it's too hot for the animals in February to successfully sire offspring. Heat stress, such as prolonged periods above 32°C or short bursts above 38°C, can affect sperm production and viability for many weeks.

Nowadays the rams are put out a lot earlier and, in some areas, as early as December.

This is just one example of how farmers across the country are modifying their operations in response to local changes in the weather they now experience. Weather patterns across Australia have changed, but each region has experienced different change. In Narrogin, South West WA, for example, there has been a reduction in winter rainfall, but in Marble Bar, Northern WA the change has been an increase in summer rainfall.

Sometimes these changes are not easy to notice amid large seasonal and year on year variability. We humans tend to remember the extreme events and not recognise the gradual change. Farmers and agribusinesses will need to adapt their

decisions to respond to these gradual changes as we cannot presume the future will be the same as the past. And to adapt, information is critical.

Throughout 2019, climate data experts from the Bureau of Meteorology together with CSIRO scientists specialising in the inter-relationships between climate and agriculture visited all 56 of Australia's NRM regions to explore how historical weather observations could provide insights into any changes experienced in the region.

The result of these consultations combined with further data analysis by BoM, CSIRO and Farmlink are localised climate guides for each NRM region, made available on the Bureau's website as well as via the National Farmer's Federation FarmHub tool and the Climate Kelpie website. The guides were funded through the Commonwealth Government's Drought Assistance Package.

The climate guides present historical weather and climate information from the past 30 years of observations, and in doing so, describe the current climate in the context of short-term and long-term regional variability.

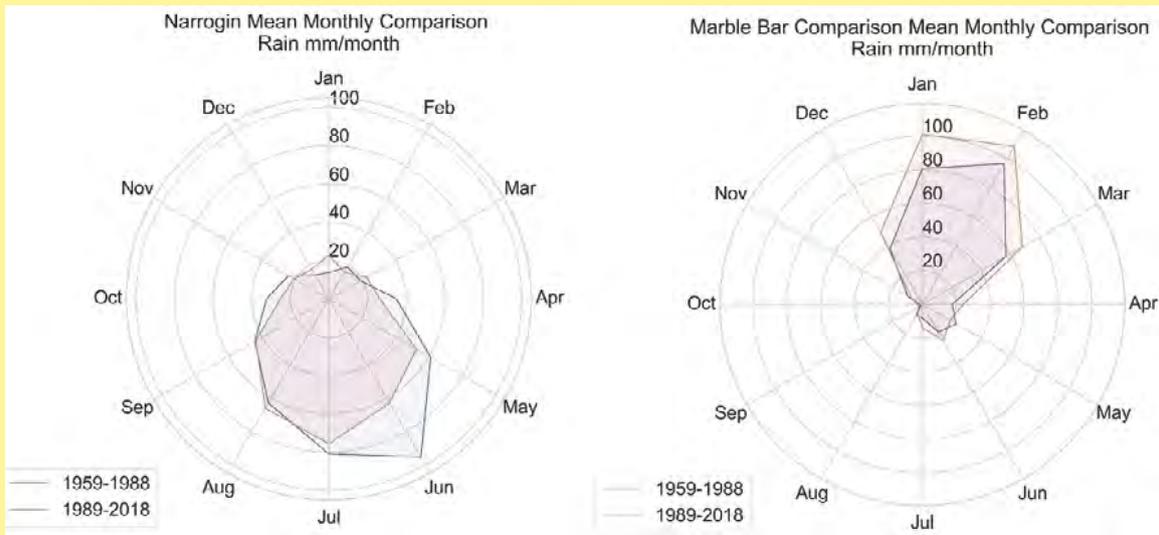
The aim is to provide farmers and agribusinesses with agriculturally relevant climate information so they can make the best decisions based on information not just about the past but also about the possible future.

Knowing about what can be expected, such as likely rainfall and duration, temperature trends, frost risk, when to expect



Regional farm practices have changed in response to climate.

FIGURE 1: Examples of some of the graphics shown at the regional consultation workshops



the wet season, and the nature of local droughts, floods and heatwaves helps farmers take advantage of new opportunities and prepare for the next drought and the one after that.

Dr Jaci Brown, Leader of the Weather and Climate Decisions Team at CSIRO, explains that the guides give data to the people who need it in a way that is useful.

“We’ve learnt so much from developing these guides about how we can help rural Australia interpret climate risk,” Jaci said.

“We are now looking at delivering these insights through online interactive tools that can be adapted to individual farms and sector needs in even more detail. This will make it possible to see the conditions today and climate projections for the future in the context of what has occurred in the past.”

At each of the NRM region consultation workshops, communities were presented with different graphics showing trends in their local weather. These were met with many ‘aha’ moments, such as in Rutherglen when local cropping farmers connected rainfall patterns to their decision to change the way they cropped. In Tasmania, irrigators could see and hence articulate why they needed to review the breakpoints in their irrigation permits. And of course, in Broken Hill, farmers made the connection between their gut feelings about their rams and the climate records.

Copies of the completed climate guides are available on the BoM website and FarmHub.



FIGURE 2: Records of climate changes at a regional level

