



Expecting the Unexpected through Climate Forecasting

On 19 January 1991 John Hamparsum experienced first hand the power of weather over his livelihood. In a matter of minutes a hail storm destroyed 80% of the year's cotton crop – a catastrophe that almost cost him the farm. The Hamparsums then faced another serious blow. A departmental change in water licensing from area to volumetric resulted in over-allocation of water resources. They faced losing up to 77% of their allocation of groundwater for irrigation.

John's 1,480 hectare property 'Drayton' near Tamworth, NSW was purchased by John's father in 1961 as a grazing enterprise. It went on to become one of the first irrigation properties in the area, producing irrigated cotton, with some wheat and corn. Water comes mainly from bores, with some surface water from high flows in the Mooki River.

"My father was against the department's approach because he believed it was a mining situation that wouldn't be sustainable. But they ignored his advice," John said.

"Now we're faced with a situation where we could lose up to 77% of our licence, which means our farm is under considerable pressure because our infrastructure is set up for 100% allocation.

Our interest in the climate has been exacerbated by the pressure that's been placed upon us, so we use as much information as we can to minimise the amount of water needed for the paddocks and try to keep that water in the bank until we need it in dry times."

John turned his lifelong interest in weather into a serious study of how to predict and plan for the longer-term cycles of climate. He drew on the learning techniques he developed while studying agriculture at the University of Western Sydney. His observation of weather as a pilot also proved to be of great benefit.

"You access information from as many relevant sources as possible. You determine what is relevant to your operation and then stay in touch with it constantly. Putting it all together in to your head and making an

informed decision is the secret of success. Nobody gets it 100 percent right."

John had early success using seasonal forecasts to help the farm recover from the 1991 losses. Under pressure from the bank, he was facing forecasts of a dry season in 1992. After talks with the National Climate Centre, John decided to take the risk of putting down a new irrigation bore, at a cost of \$150,000.

"To make the money back we needed a crop. To grow a crop we needed water. We put the bore down and as a result managed to increase our yield during a period of no rain. I was able to compare the fields that were irrigated with those that weren't.

"We increased yield by 1.5 bales of cotton per acre in a drought year. We ended up with a 300 percent return on our investment in the first year."

John and his father travelled to the U.S. to talk to Mississippi researchers about managing for climate variability. They returned with the catchcry 'Earliness is next to Godliness' and changed their whole cropping philosophy.

In 1998 their approach paid off again. There were indications in autumn that the NW cloud bands were getting stronger and that a wet winter was probably coming. John brought in another contractor to harvest the cotton crop as early as possible. The harvest was completed by May, while many neighbours were unable to complete harvesting until August because of the wet conditions.

"The costs of not getting the crop harvested in time are huge," John said. "We saved over \$150,000 by harvesting before the rain."

Climate is now a key factor in assessing risk and making management decisions for the coming season. John considers factors such as yield, prices and climate forecasts, then makes a decision about the risk involved.

"Last year we had climate indicators showing a good finish to the season. This year commodity prices are at record low levels. Even though there are indications of a wet summer coming on, I won't be growing dryland crops of a high risk nature."

John accesses his climate information from the Internet and his shorter-term information from the Cotton Fields Farm Weather service (Bureau of Meteorology).

"I've made a point of making personal phone contact and becoming friendly with the forecasters. I talk to them as regularly as I can and that seems to be of great benefit," John said. "I've found by contacting them personally that they often get quite excited. They don't have much contact with their customers, and they don't know how their information is being used."

"There needs to be a lot more interface between the researchers and the users. One thing we do is send down a bag of cotton seed to the special services unit each year and they plant it in their gardens in Sydney. It gives them a bit of an agricultural feel to what they're doing."

John advises other farmers: "Be observant of all the information you can access and spend time analysing it. If something new turns up, find out more."

"Recently we were in a drought and all of a sudden the trees started shooting leaves. Two weeks later we had six inches of rain. These sorts of observations are a lost art today, but your climate information needs to come from as many sources as possible."

"Remember to expect the unexpected! The chaos theory holds as much water as any other!"

This article was reproduced from the Masters of the Climate series conducted by the Climate Variability in Agriculture (CVAP) R&D Program. CVAP is a national program whose goal is: "To work with the Australian agricultural sector to develop and implement profitable and sustainable management strategies which prepare it to respond to the major opportunities and risks arising from climate variability."

You can view other case studies on the CVAP website:

www.cvap.gov.au

John's favourite weather websites

Bureau of Meteorology:

www.bom.gov.au

Long Paddock:

www.dnr.qld.gov.au/longpdk

AGNET:

www.agnet.com.au/weather.html



◀ John Hamparsum has put to good use his – and others' – climate predictions on his NSW cotton property