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New model to boost irrigation forecasts

KNOWING how much water you have for irrigation is a tricky business – and getting it wrong can be a costly mistake.

So how can a farmer improve their estimates of water availability? CSIRO is developing an early seasonal climate forecasting model for both water allocations and for on-farm irrigation demand, working directly with farmers in the Riverina.

"We expect the model will have real potential to improve farmers' water productivity and reduce risk," said CSIRO lead researcher Dr Don Gaydon.

Unlike irrigation scheduling tools, which advise farmers on the best watering schedule in the following week, the seasonal forecasting model will provide farmers with the ability to plan at the start of the season what crops to plant and what area they should sow.

According to Dr Gaydon, in the good old days farmers could rely on getting pretty much all of their water allocation for irrigation, but in the last fifteen years this had changed.

"These days farmers might get anywhere between zero and 100 per cent of their allocation due to variable seasons and mandatory allocations for protecting environmental flows," Dr Gaydon said.

Many farmers use historical weather records to make educated guesses as to how much on-farm water will be available that year.

However, in the past few years historical weather records have been proving a poor guide for what might happen in the future, because of increasingly variable weather patterns.

The combination of not knowing the actual irrigation water allocation and what the on-farm water demand will be in the coming season creates a great deal of uncertainty for farmers, as well as potentially significant financial consequences.

Dr Gaydon is working with wheat and maize farmer David Cattanach to test forecasting models on his farm "Sunshower", Darlington Point, in New South Wales.

Dr Gaydon has been measuring actual performance and yields at "Sunshower", compared with those provided by the model.

"By the middle of this year, we expect to have results from the first phase of this work," Dr Gaydon said.

"We then hope to extend the research by testing the model with dryland and surface water farmers and also in different regions.

"Developing an effective model for forecasting climate will be extremely useful for helping farmers decide which crops and how much area to plant."

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Intensive irrigation in southern NSW's Riverina.