

Choices chances and chocolate wheels

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Background

The understanding of the interaction of oceans and the atmosphere represents an enormous international effort in climate science. Farmers, like most of us would prefer categorical forecasts that can be slotted into an IF THEN ELSE rule. IF season is going to be drier than average, THEN grow lower risk, lower return crop, ELSE stay with mix of low and high risk crops. Despite this preference for certainty, climate science can only offer probability.

The uncertainty in seasonal climate science remains a challenge for communication first because it involves a longer message, and second because it involves a more complex message – that when it comes to the season ahead we have both skill and uncertainty, signal and noise, knowledge and ignorance and hence farmers have to factor the information into their risk management.

Objective

To use an EXCEL based simulation game to explore issues of using a skilful but uncertain forecast for decision making.

Overview

The purpose of the game is to decide the portion of the farm that should be planted to a new higher return higher risk crop (dazzle bean) and the

portion to leave in the traditional lower return lower risk crop (stable cereal). There are 3 rounds. In the first round participants hear from an agronomist how valuable the new crop is and need to decide the portion to plant, the game is cumulative and people start to learn from experience. The second round introduces the probability distribution of the profit of the two crops and the third round involves seasonal climate forecasts. The game involves a random sampling from a distribution.

The impetus for developing the game is the strange comment often made by farmers and advisers “It would be far to risky to use seasonal climate forecasts”, the point is that risk (uncertainty with consequences) exists and people are making decisions under uncertainty whether they use SCF or ignore them. What we can do is characterise some of the future uncertainty as risk profiles of different options.

Acknowledgement

Aspects of this game were adapted from a far more sophisticated workshop called risky-business developed in West Australia (UWA and State Dept of Ag). This version of the game was developed by Peter Hayman for an Advanced Training Institute at the IRI, Columbia University NY in July 2002 and also forms part of a GRDC project on crop choice.