Notes V1.5

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and I can send an update.

The purpose of this spreadsheet is to conduct calculations for a game

The purpose of the game is to decide how much (% area) of a new crop wonderbean to plant.
There are 3 rounds, the first is where participants just hear from an agronomist how valuable the
new crop is. The second round introduces the idea of a probability distribution of the profit of the
two crops and the third round involves seasonal climate forecasts.

The first round of the game is played with an explanation along the lines of the following.

I am an agronomist and have a new crop for you. We have examined your current stable cereal
and realise that yields are not high enough for you to produce a good surplus in the good years.
This new crop, wonder bean has consistently out yielded stable cereal. Oh yes, there was a drought year
when it didn't do very well, but nothing does very well in a drought. Our economists have had a look at
the results and shown that although wonderbean is more expensive to grow it is more profitable.
We didn't bother analysing the drought year because we thought the results were unreliable.
You need to decide as a group what % area of your farm you want to plant to wonder bean.

1.1 On sheet "Enter decision" enter the % area for each group in cells C2, C5, C8 and C11. (don't worry about
the #NA in the cells below)

1.2. On sheet "Spinner", first check that there is nothing in cells C12:K14 - if there is press the clear button in the
top right hand corner. Then check that the spinner is set at 33:34:33, if so press the spin button - this will result
on a percentile rank between 1 and 99, 1 being the driest and hence poorest yield and 99 the wettest and hence
highest yield. Then press the calculate button, this will put a result on the graph of the profit from stable cereal
and wonderbean.

1.3. On sheet "Cumulative graph" there should be one point for each group. After showing the group where they are after
one year, then ask them to enter their choice for year 2 on the "Enter decision" sheet and then go to the "Spinner" sheet
press the spin button followed by the calculate button before showing people the result on the cumulative graph.

Round two is started after showing people the risk profile of the two crops. This is like a crop modelling exercise
that shows that wonder bean is ahead in the good seasons and behind in the poor seasons.

Repeat the steps as above - you can use clear button on the "Spinner" sheet to start again or continue
adding to the years from round one.

Round three is based on changing the pattern on the spinner between each year so that the groups can factor the
forecast into their decision making.

The game is trying to show
a) in the first round that decisions have to be made with uncertain outcomes and limited information. Uncertainty and
risk exists - simulation and climate forecasts are ways of managing this uncertainty.
b) in the second round that it is difficult to capture the risk just by living through 4 or 5 years of a new crop
At their best, modelling and decision support systems quantify some of the uncertainty as risk profiles and this can be .
a valuable contribution to decision making under uncertainty
c) that skilful but uncertain forecasts may influence the decision making but they don't eliminate the risk.
Seasonal climate forecasts do reduce the uncertainty and indicate which way to lean not jump.

Acknowledgment: This idea for this game came to the author while playing Risky Business a game developed
by a group of farm management economists in Western Australia. (See V.Stewart, S.Marsh, R.Kingwell, D.Panell,
A.Abadi and S.Schizelli (2000). Journal of Agricultural Education and Extension 7(2):117-128. There is a high probability
that these economists would be dismayed at how an agronomist has simplified their whole farm approach and added
spinning wheels. The game was first used at a course Peter Hayman ran at IRI Columbia University and has been
further developed for the ACIAR project "Bridging the Gap between SCF and Decision Makers"