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Variability in weather:

What are the consequences for grazing enterprises?



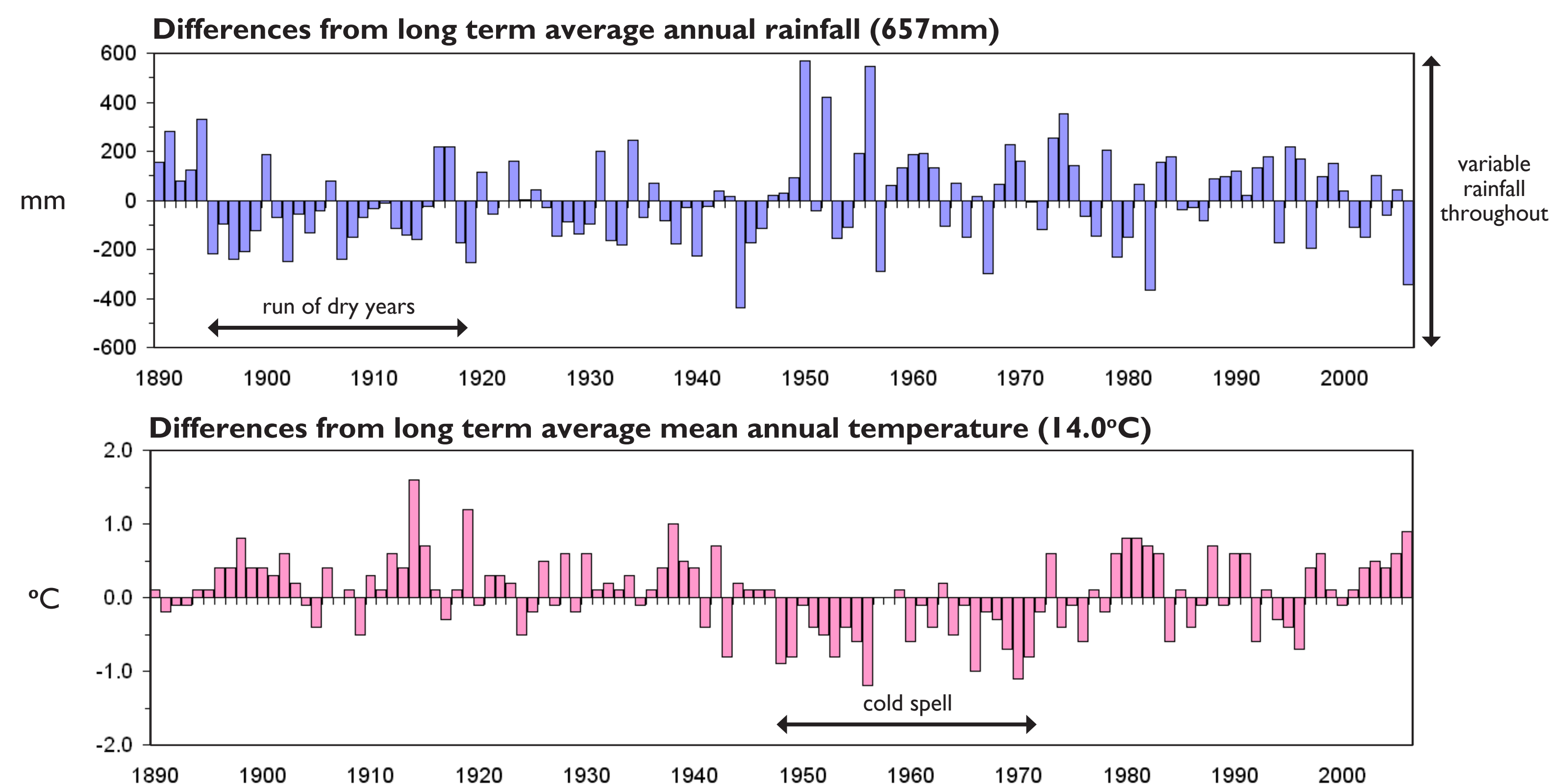
How do recent weather patterns compare with the past?

What are the impacts of our variable climate on pasture production and financial outcomes for a wool enterprise?

We can only test the likely effects of long-term weather records on grazing systems by using computer simulation tools such as GrassGro®.

Variability in simulation outcomes is based on the variability in weather inputs.

Weather since 1890



Sheep enterprise examined in GrassGro:

- A fine wool (18 micron) Merino wether flock continuously grazing mixed perennial-annual grass pasture at Yass, NSW. Two stocking rates tested: 12 and 15 wethers/ha.
- Daily weather inputs for 117 years (1890-2006) were obtained for Yass from the SILO website Data Drill.

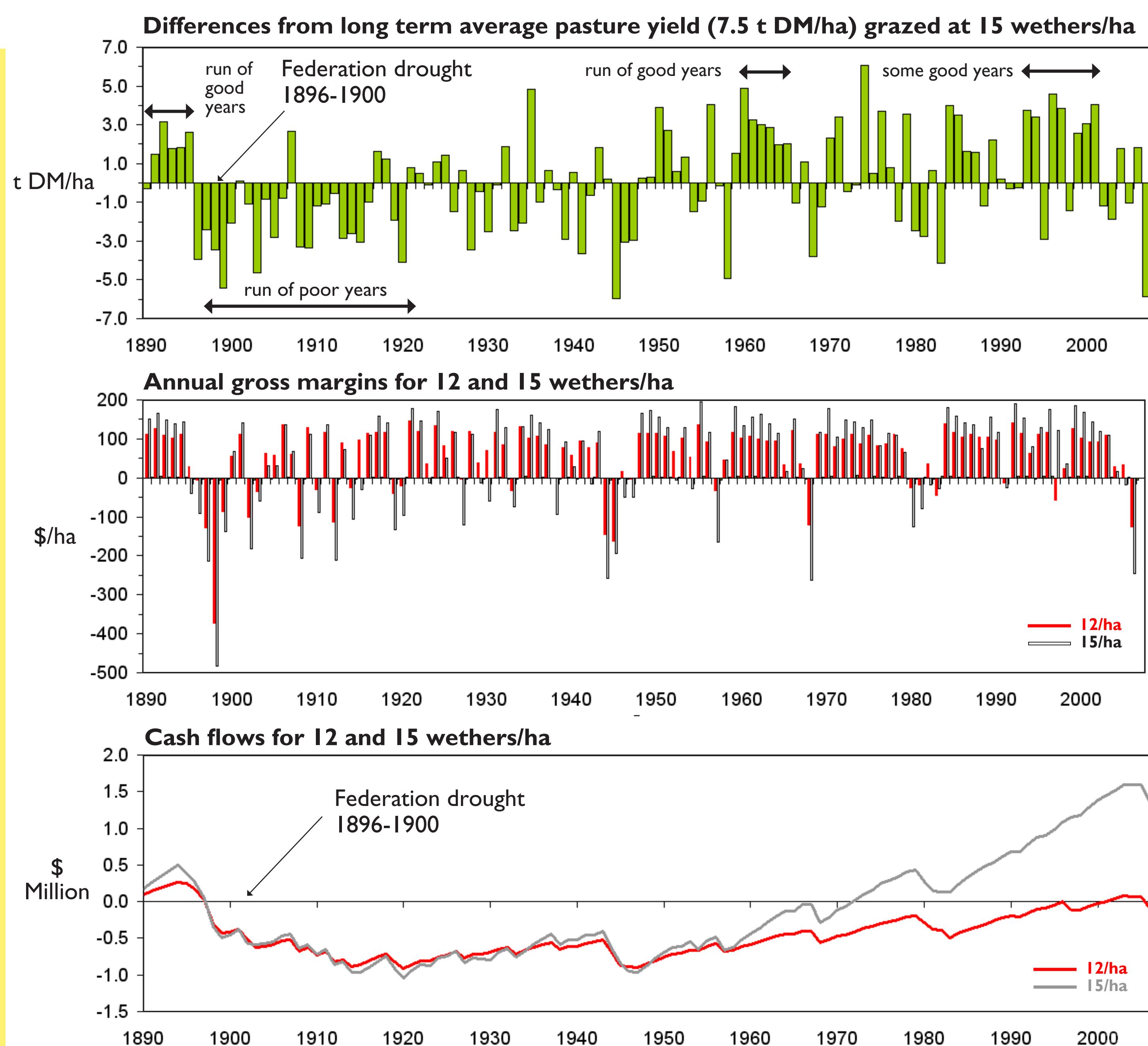
SILO uses several local historical weather records to construct a continuous series of data.

CAUTION

Actual rainfall records for Yass exist from 1898. Data **prior to 1957** for temperature, radiation and evaporation are less reliable.

- Costs and prices applied each year:
Wool price (c/kg clean): 1375 (17 micron); 990 (19 micron)
Supplement cost (\$/t): 195 (most years), 300 (droughts)

Consequences



The promising years of the early 1890s were followed by the “Federation drought” and poor seasons until the 1920s.

Since the 1950s there have been more good seasons than bad.

During most (but not all) droughts, gross margins were lower at the higher stocking rate (15/ha). But the higher stocking rate put you in a better financial position in the majority of years.

Since the 1950s the higher stocking rate (15 wethers/ha) utilized pasture better and returned higher gross margins.

Hypothetical cash flows for each stocking rate were negative during the succession of droughts until the 1920s, then stabilised.

Since the 1960s greater financial gains were made from stocking at 15 rather than 12 wethers/ha.

Grass Gro® 3

This analysis does **NOT** predict climate change or shifts in the future weather patterns.



In the past, graziers have experienced great variability in weather. Future grazing systems must be managed to cope with at least as much variability.

Acknowledgements

