

# IFMA CONFERENCE

A THOUGHT EXPERIMENT IN BENCHMARKING AND  
OPTIMISATION

[SIMON.WARD@INCREMENT.CO.UK](mailto:SIMON.WARD@INCREMENT.CO.UK)

Mauldon and Schapper (1970).....wrote 'Random Numbers for Farmers' ... which had implications for the use of comparative analysis of farm performance ratios. They started with a forceful assertion:

*“The connection between the title and the content of this paper is that the purposes served by those who want statistical comparisons of key or efficiency ratios and of historical gross margins between farms and between activities within a farm, could be met costlessly and punctually by sets of (almost) random numbers. This is because such Comparisons and margins are of slight use in planning, budgeting and diagnosing strengths and weaknesses in farm management, and are untimely, expensive and inaccurate. ....”*

# BENCHMARKING

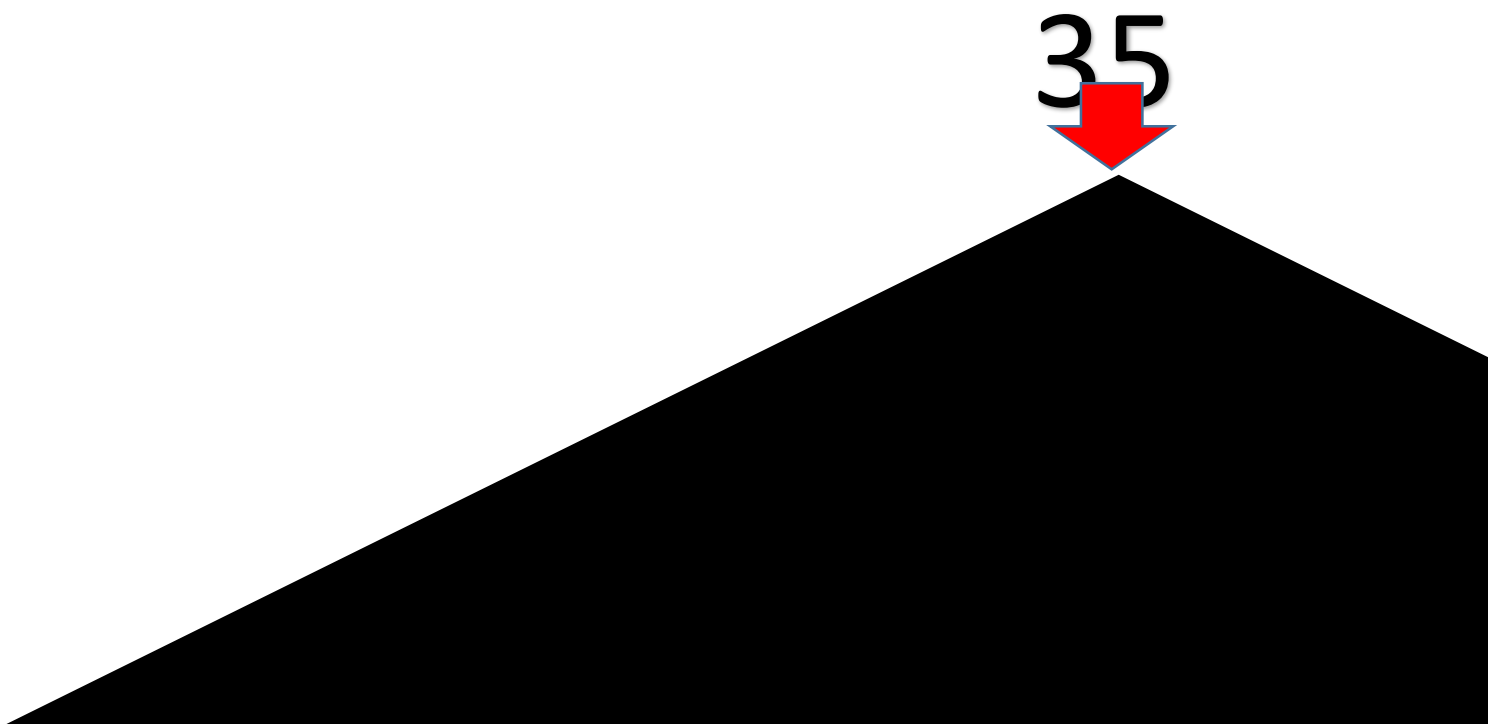
Historically there have been two types of assessment applied to agriculture:

1. Agronomic or production: replicated trials providing statistical certainty and a response curve.
2. Financial: survey data top % or frontier. Disparate sample weak statistics.

# BENCHMARKING FINANCIAL

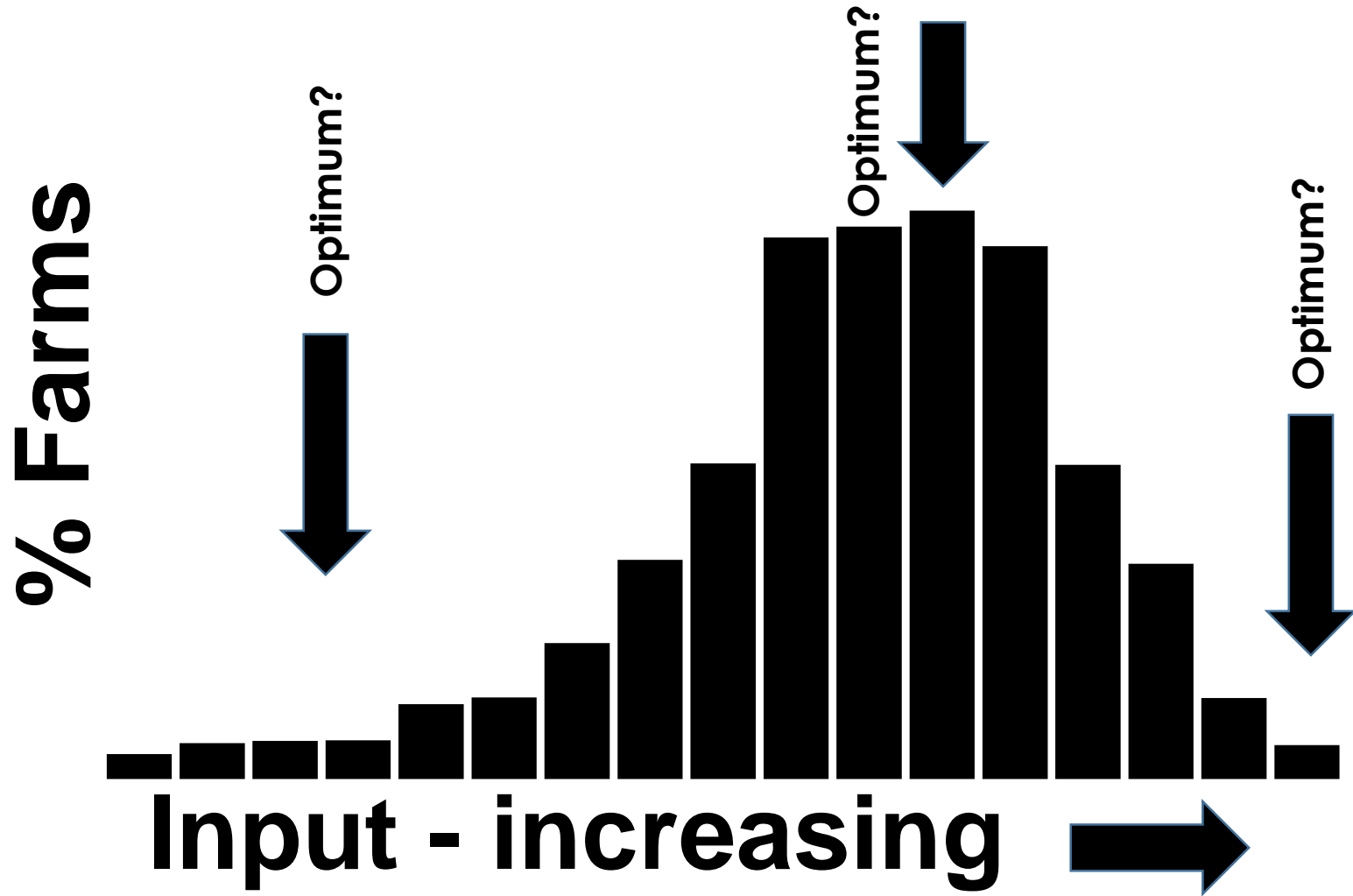
- Rarely a response curve usually simple comparison – the “top” % is the target
- Individual inputs may be neutral, positively or negatively related with the target metric (or each other).
- Averages may represent no one in the population
- There is no indication of the ease of achieving change or risk

**Profit** ↑

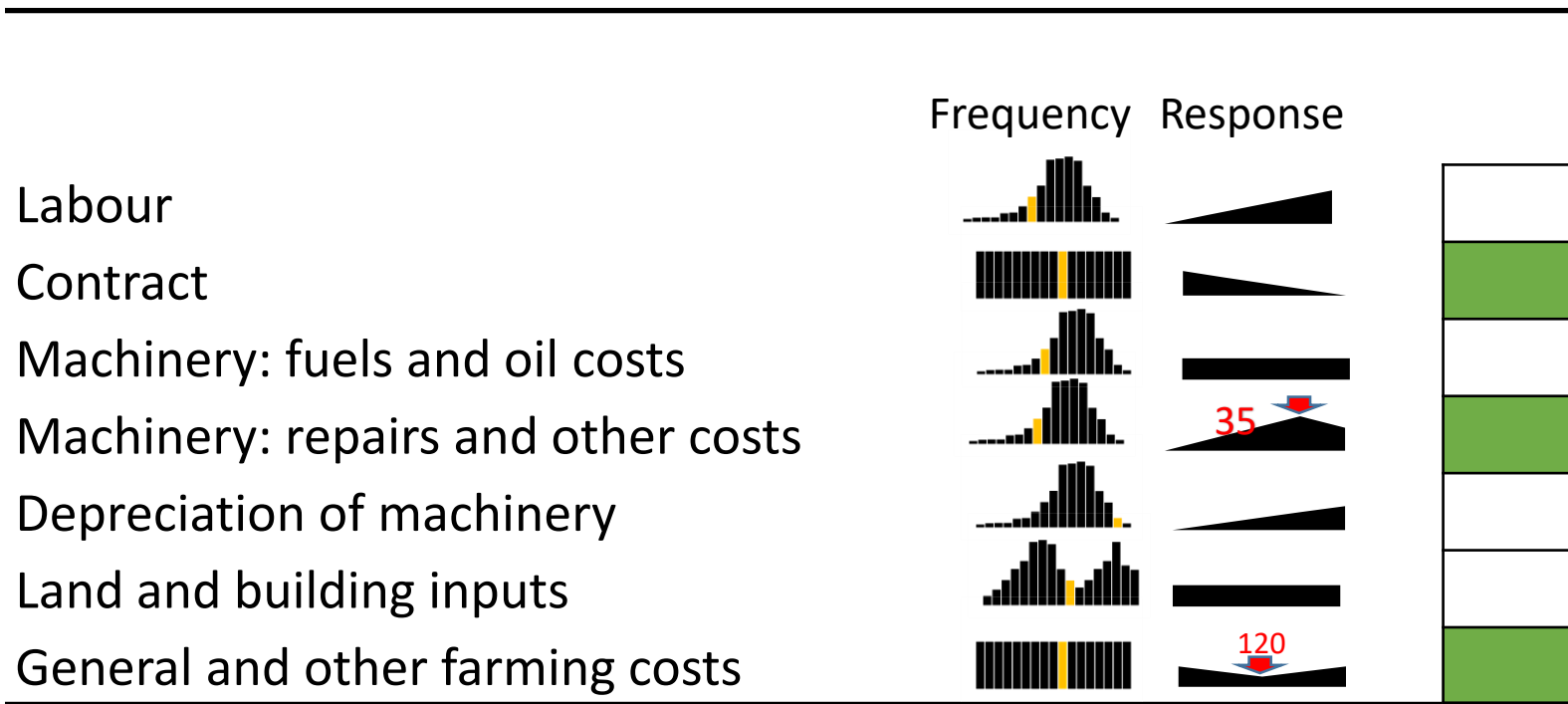


35

**Input** →



# FOCUS...



# BENCHMARKING AGRONOMIC

- Limited comparison – with potentially dominant interactions of geography, season and base treatments
- Statistical significance usually assumes a “normal” distribution risking over or under estimating impact
- Expensive to undertake



# BENCHMARKING AGRONOMIC

Mapped data a solution or return to medieval science?

Mapped GPS/GIS data merging of farm management and trials data?

...BUT WHO IS THE COMPETITOR?