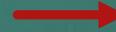




The Knowledge Transfer Challenges

Sometimes we can take Engineering progress for granted

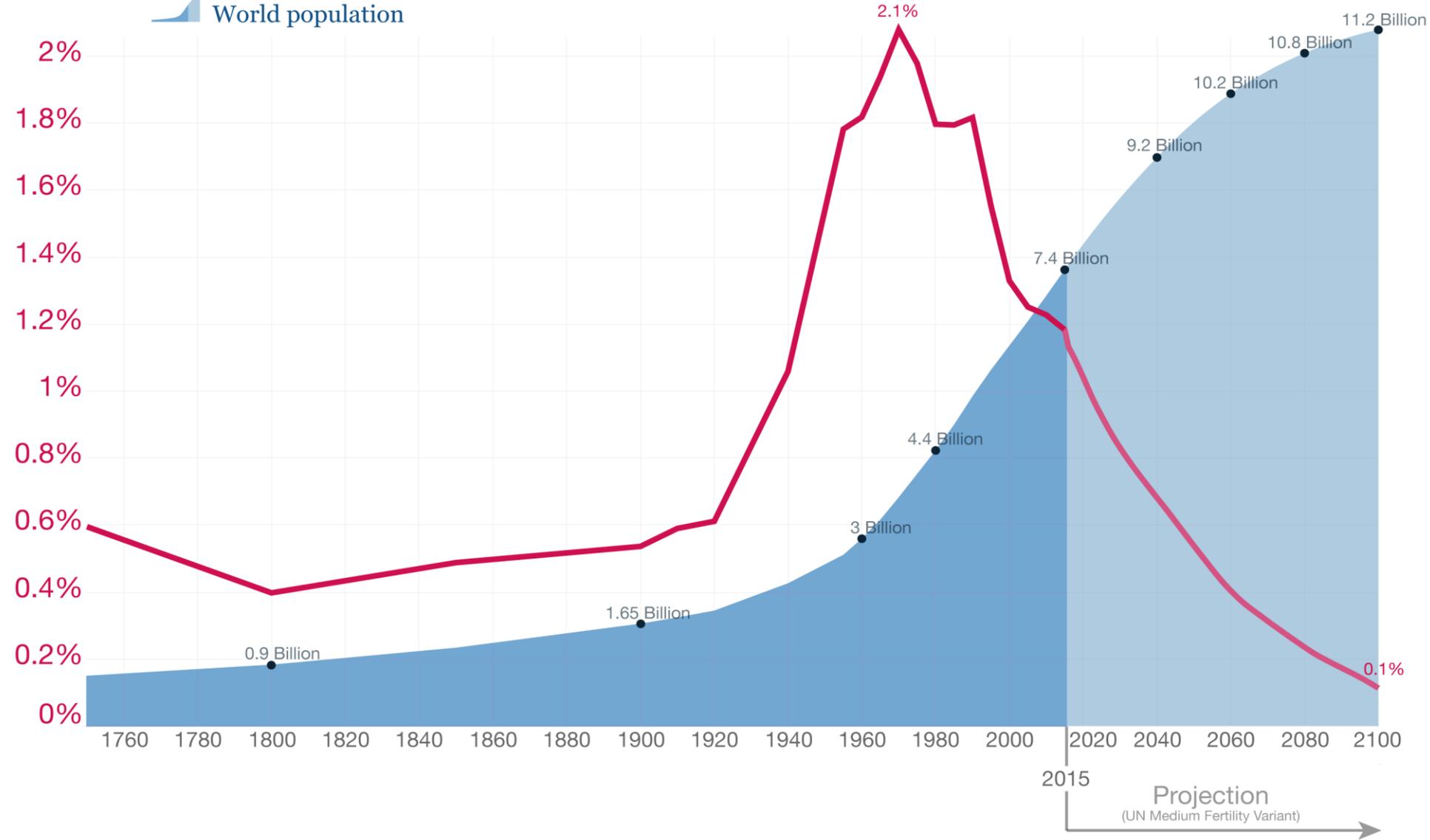




Why is the uptake of new
technology so
important.....

World population growth, 1750-2100

 Annual growth rate of the world population
 World population

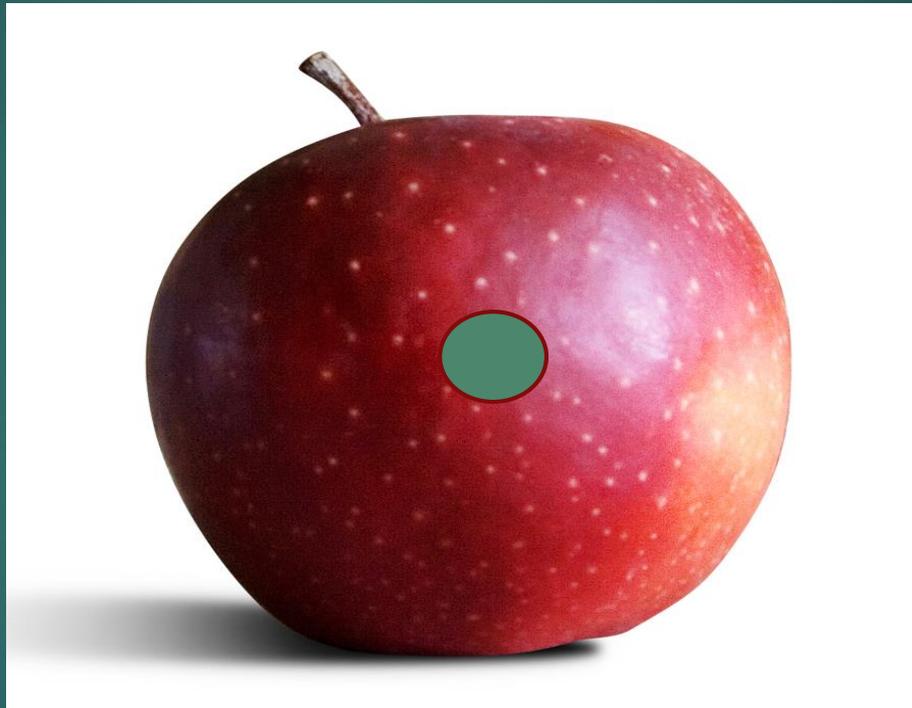


2015
Projection
(UN Medium Fertility Variant)

...But

The amount of land for farming has stayed the same....

If this was the Earth ...



...this would be the land available for agriculture ~ 3%



Why is KT so complex in Agriculture



- ▶ A diverse industry

- ▶ farm type
- ▶ output
- ▶ profitability
- ▶ technical understanding
- ▶ geography

- ▶ An ageing industry

- ▶ Average UK farmer is 59
- ▶ Independent Crop Consultant 48.



Pre-requisites for successful KT

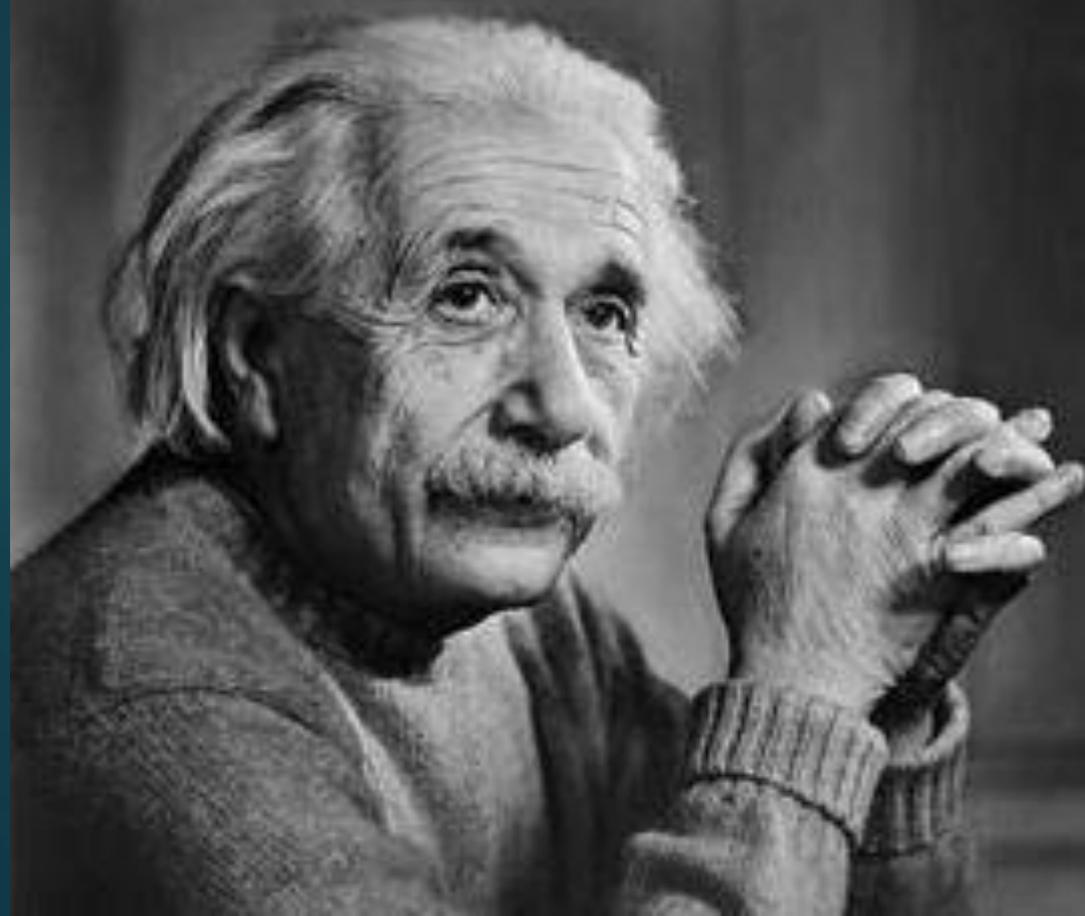
- ▶ Translation and knowledge exchange must be more than one directional to be effective



- ▶ The users of innovation need to be involved at an early stage of its development to adapt it.
- ▶ “Technology Translation” is an integral part and is a skill - it should be recognised as such.

If you can't explain it **simply**, you don't understand it well enough.

– Albert Einstein





Successful formats for KT in Agriculture



Sometimes the most complex thing can be explained with a simple demonstration...





A Successful Case Study.....

Farmers – Scientists –
Engineers – Government
funding



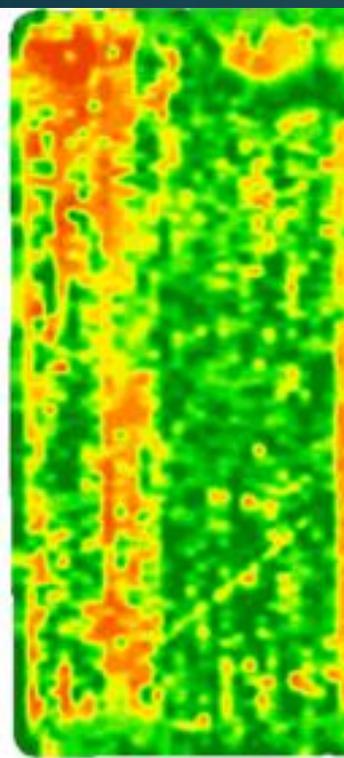
Examples of possible future collaborations between Farmers, Engineers and Scientists

Electronic Weeding





Ground Penetrating Radar & Variable Cultivation Depth



- Subsoiling at the critical depth
- Higher work rates
- Less Diesel usage
- Less wear on wearing parts



A multi line boom system ?

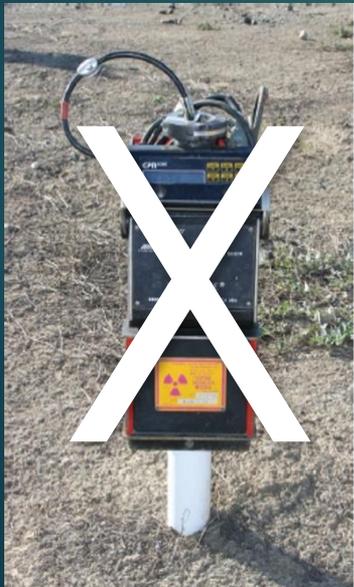
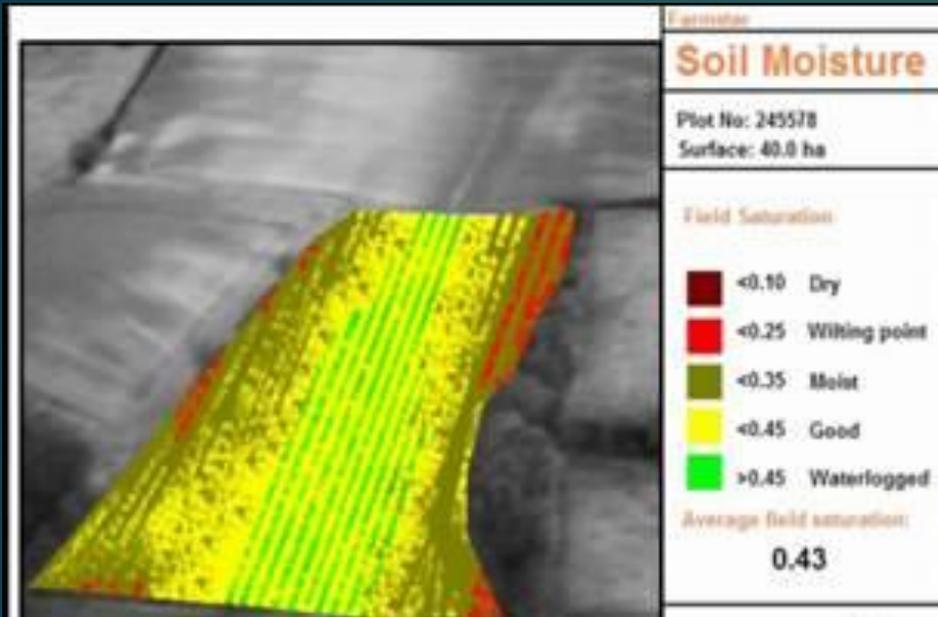


LIDAR Crop Height / Variable PGR with T2 fungicide



GPR - Soil Moisture Maps

- More accurate irrigation scheduling
- Within field differential irrigation
- Energy cost saving
- Water saving



A way forward?

- ▶ More formalised interaction between Government, its funding agencies, levy bodies, scientists and industry.
- ▶ Incentives for Engineers and Scientists for the uptake of their research into industry?
- ▶ More demonstration farm networks.

Thank You



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