Turning Data Into Insight for Farmers

Martin Rand, CEO, VitalFields

VITAL FIELDS

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Global: Crop Production Demand Climbing

RISING *population*

1980 4.4B

TODAY 7.1B

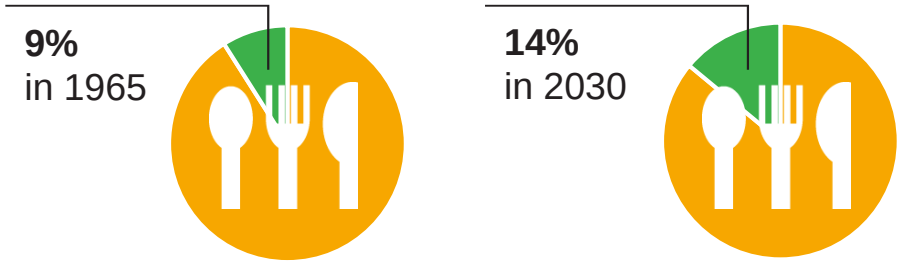
2050 9.6B+

Source: http://esa.un.org/unpd/wpp

GROWING *middle class*

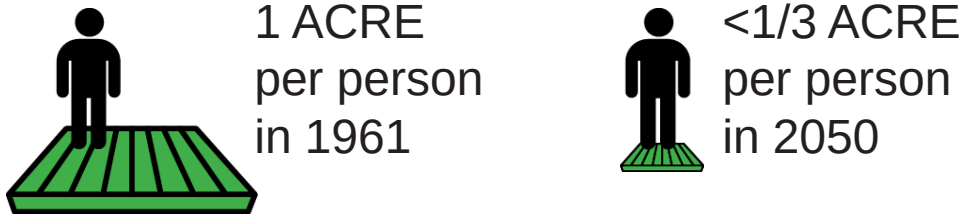
Source: http://www.reuters.com/middle-class-infographic

RISING *animal protein consumption*



Source: UN FAO Food Balance Sheet, World Health Organization Global and regional food consumption patterns and trends"

DECLINING *arable land*



Source: The World Bank, Food and Agriculture Organization of the United Nations (FAO-STAT), Monsanto Internal Calculations

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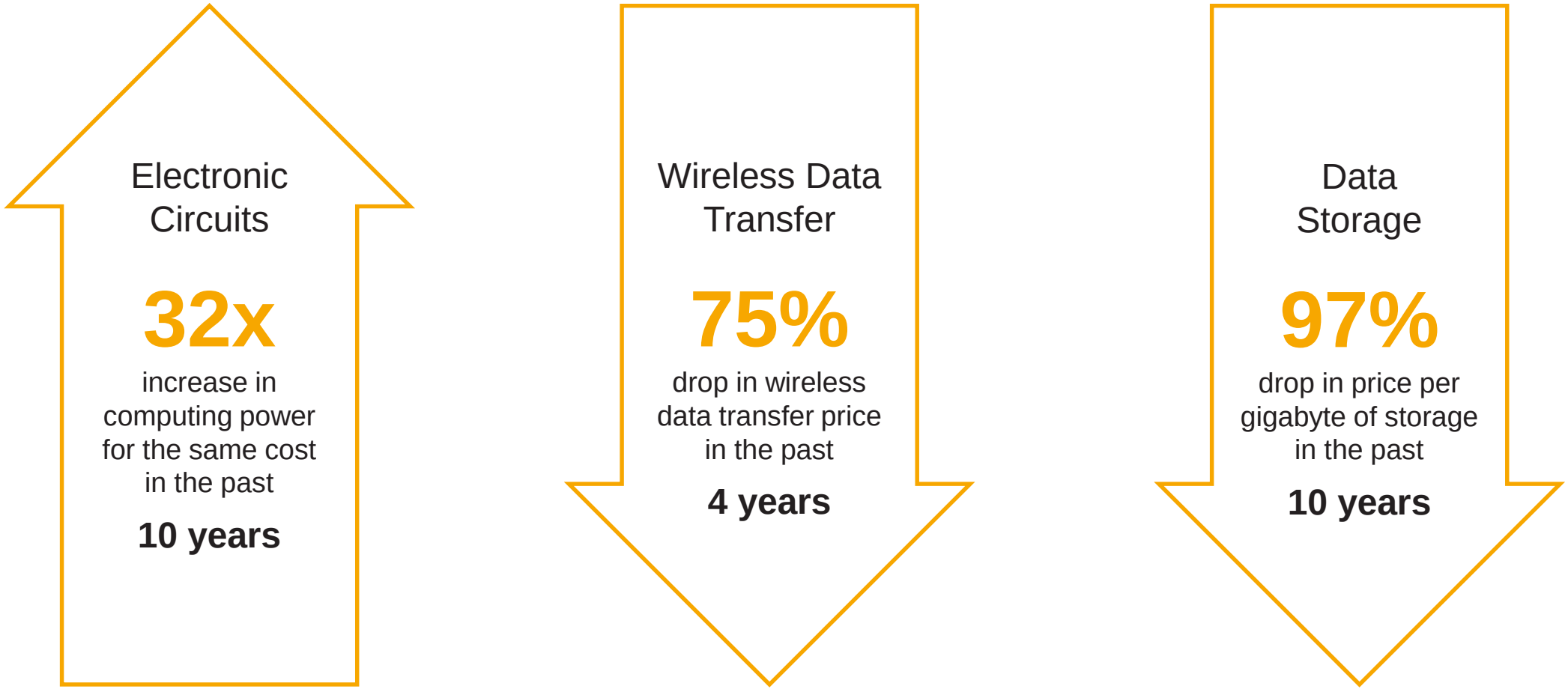
Technology Advancement Enabling Digital Agriculture



Source: Wikipedia.org, anandtech.com, Intel, CNET.com, processortimeline.info, thocp.net

Source: Cisco (global wireless data use) and Statista (global carrier data revenue estimate)

Source: Wayback Machine (Statistic Brain)

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Implications for Agriculture

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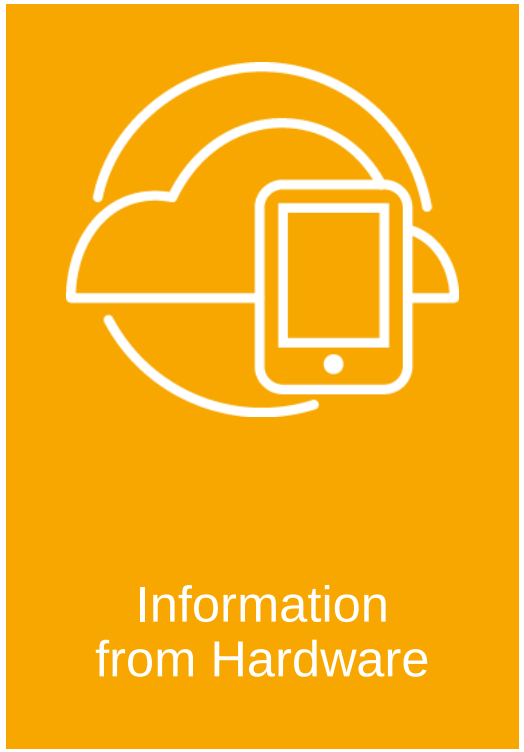
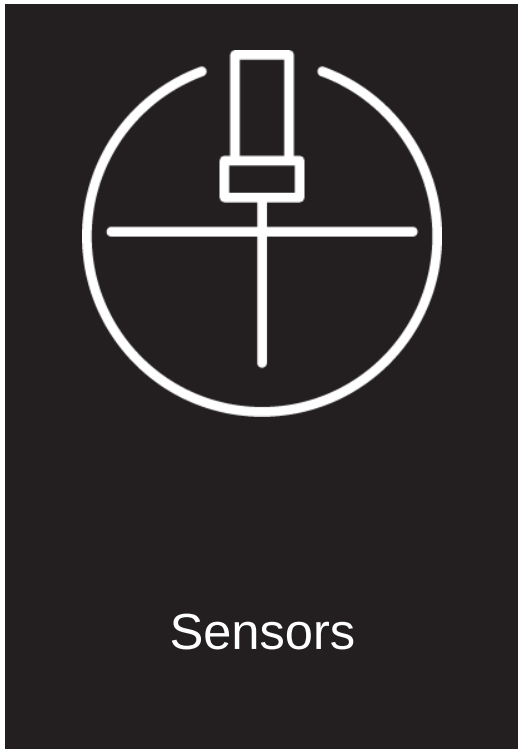
Everything That Affects Ag is Becoming Digitized





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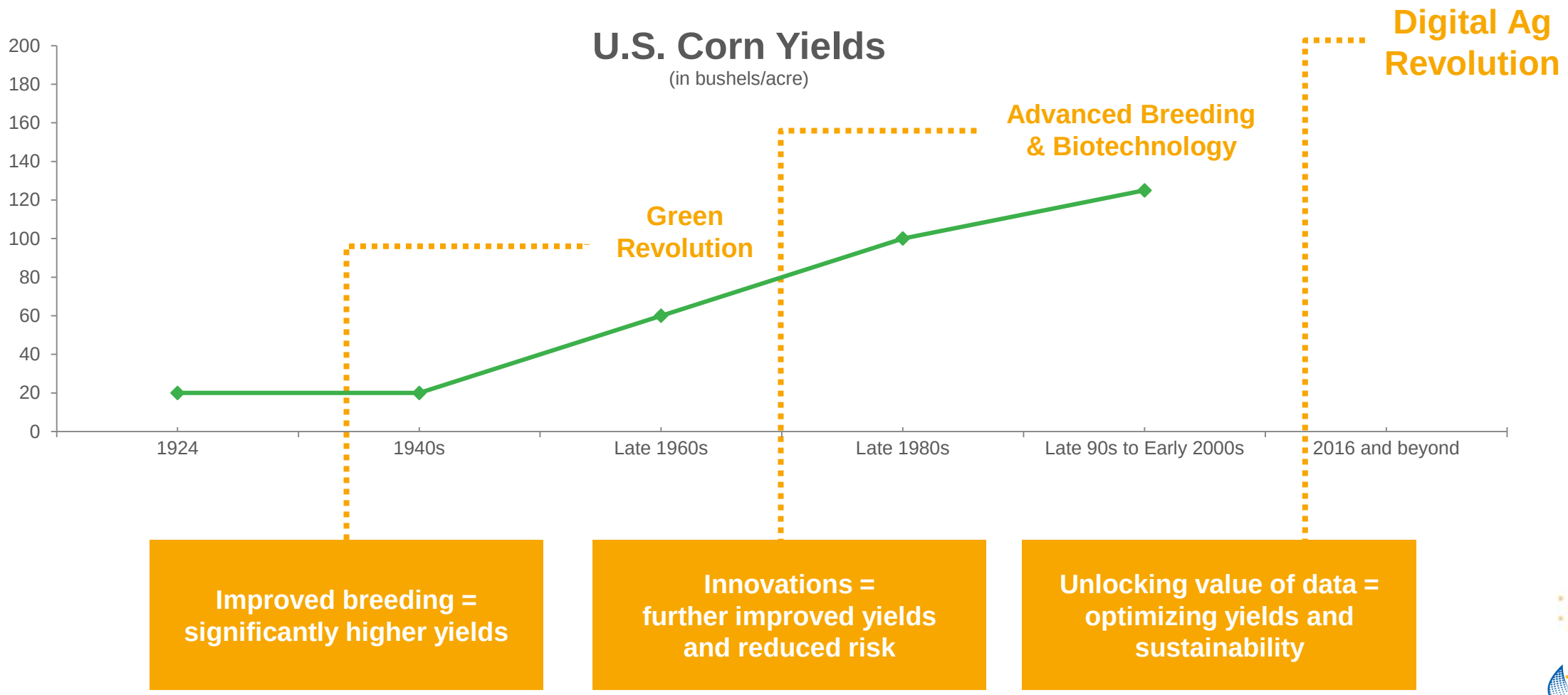
Adoption of Technology Leads to Increases in Crop Yields



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Narrow the Yield Gap from Variability

2015 NCGA Corn Yield Contest winner

532 bu/acre

vs. 168 bu/acre national average

364 bu/acre
opportunity

Seed Genetics

Diseases

Agronomic Practices

Weather

Pests

Field Variables

2015 Monsanto Soy Yield Contest winner

134 bu/acre

vs. 48 bu/acre national average

86 bu/acre
opportunity

$$Y = f(g, e, p) + \varepsilon$$

Yield — Genetics, Environment, Farming Practices — variability

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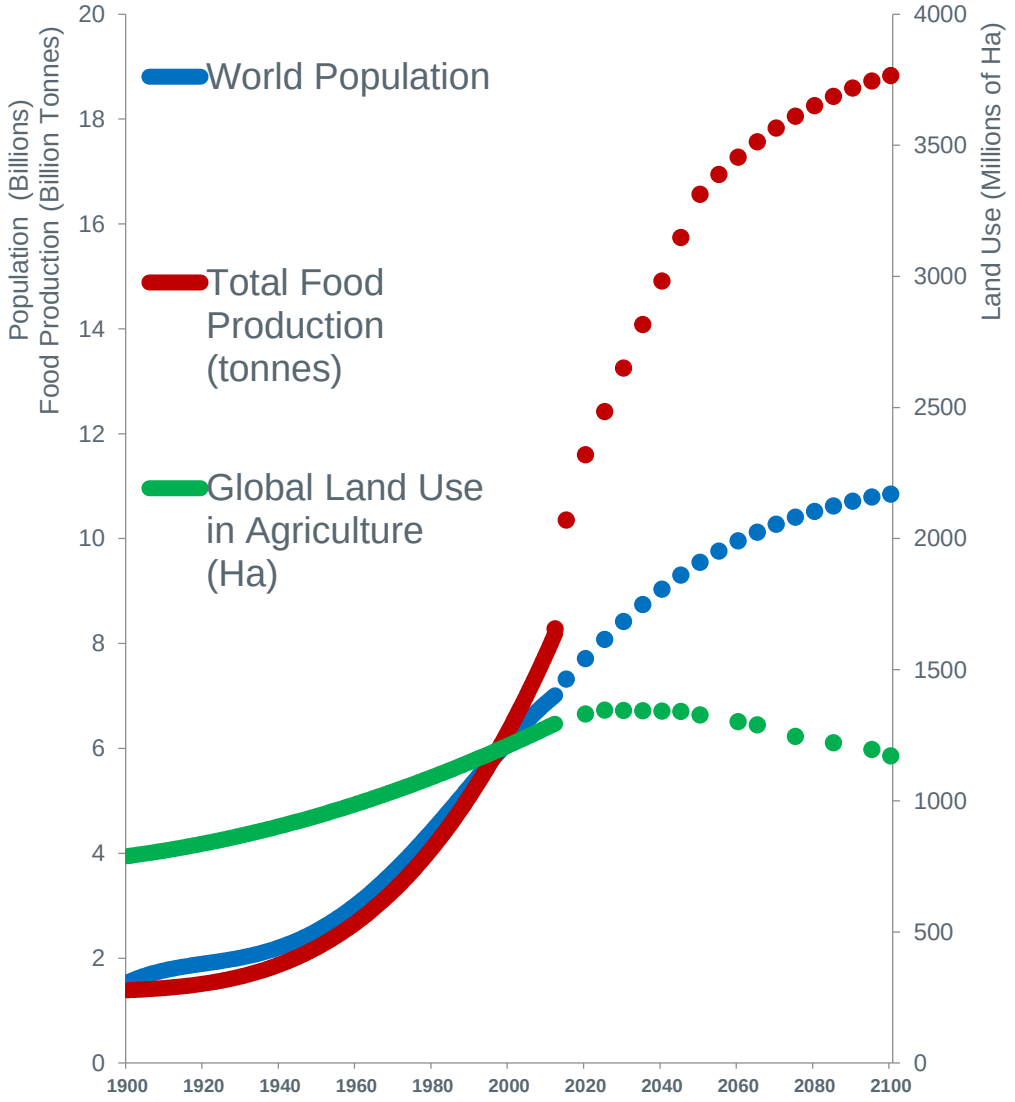
Improve Sustainability

Sustainably Supporting Demand and Preserving Natural Landscapes

- ✓ Reduce the footprint of farming
- ✓ Increase crop yields
- ✓ Improve efficiency
- ✓ Reduce waste
- ✓ Improve diets



Source: National Geographic ,"Feeding the World", 2014

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Climate FieldView™ and VitalFields

- VitalFields is now a part of the global leader in digital ag services
  - Strengthening Climate's efforts to deliver industry-leading digital technologies to farmers
  - Building one centralized digital ag platform to provide farmers with tools to optimize their operations
  - Expanding access to these tools in Europe and around the world

VitalFields prevented the overuse of 10-30 kg/ha nitrogen using data analysis on test farms

Spring wheat

Spring wheat over fertilisation due to the yield objectives set too high for the soils. Over application on nitrogen was 20 kg N/ha. +21 €/ha gain.

Plant protection: One pass of spraying could have been avoided. +24 €/ha gain.

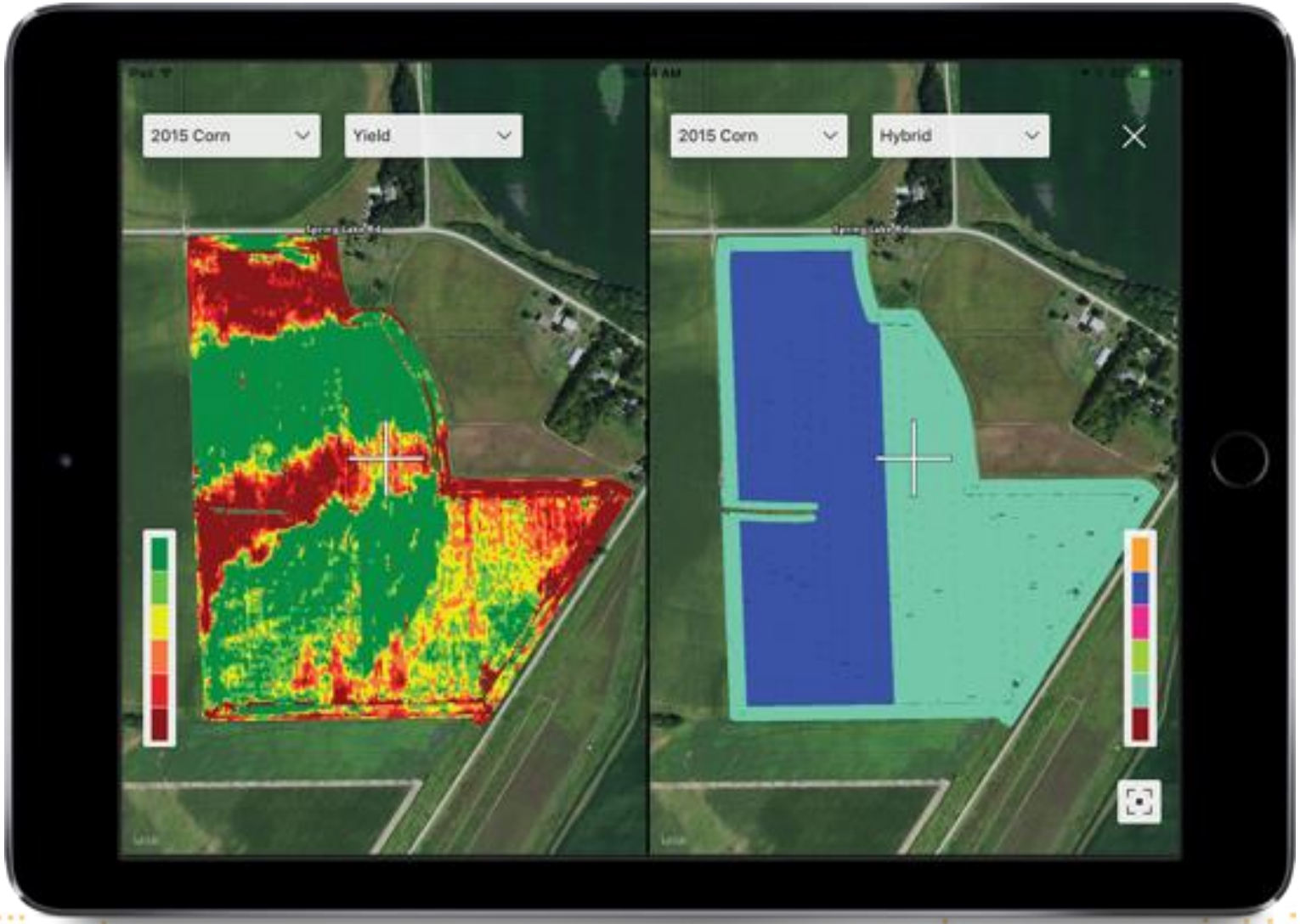
Winter wheat

Winter wheat over fertilisation of 10-15 kg N/ha. +13 €/ha gain.

Winter rapeseed

Winter oilseed rape over fertilisation of 30 kg N/ha. +31 €/ha gain.

Digital Ag Today



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Climate's Vision for Digital Ag Tomorrow

A digitized world where every farmer is able to optimize and flawlessly execute every decision on the farm.

Clear and Consistent Approach to Data Privacy

- Farmers **own the data** provided to us
- Farmers **can delete their** data from our systems upon request
- We will **ask for farmer consent** before using information for any purpose other than those described in our policy

Thank You

For more information, visit Climate.com

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