



BCPC Congress 2025

Building Resilience in Crop Production

73 Years of Family Farming...

Farming
43,250ac
(17,500ha)

9,500
colleagues
around the
world

1.2bn+
packs of
produce
per annum

1952

Guy S Shropshire acquires
330 acres of land near Ely,
Cambridgeshire.

Farming
330ac
(134ha)



Farming
5,700ac
(2,300ha)

1985

G's Growers Co-operative
formed.

Guy expands production
into Spain to complement
the UK season.

2025

Today, G's is one of Europe's
largest fresh produce
businesses.



Why Do We Want To Change The Way We Farm?

From 2012...

The journey to change our farming began with a drive for environmental improvement and sustainable food production, whilst setting up soils for the next generation.

... To Today

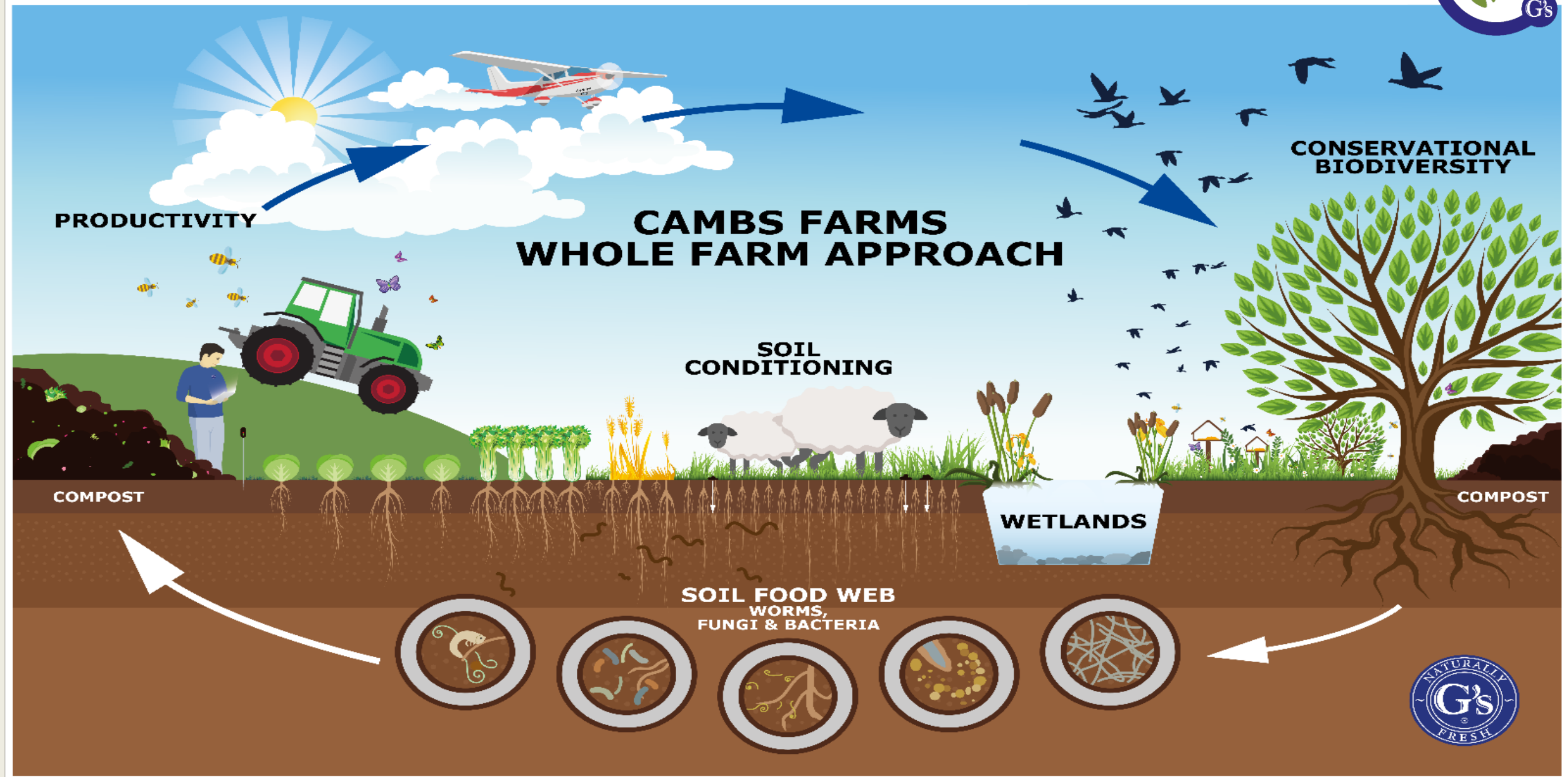
This still stands but looking at how we have progressed.... it's also about the way in which we produce our food and supply our customers....

Being able to sit here and all say we are having a positive impact on the environment by producing food and the benefit to the consumers from eating the food we produce.

Having continuity of supply during the extremes of weather... To be the ones who never drop an order.



G's Fresh Whole Farm Approach



Why do we need a new farming paradigm?

Why Change to Regenerative Agriculture?

Farming Business Context



Soil Resilience





Horsepower & Cultivation





Input Costs





Water Security & Quality





Customer Focus
On GHG Emissions





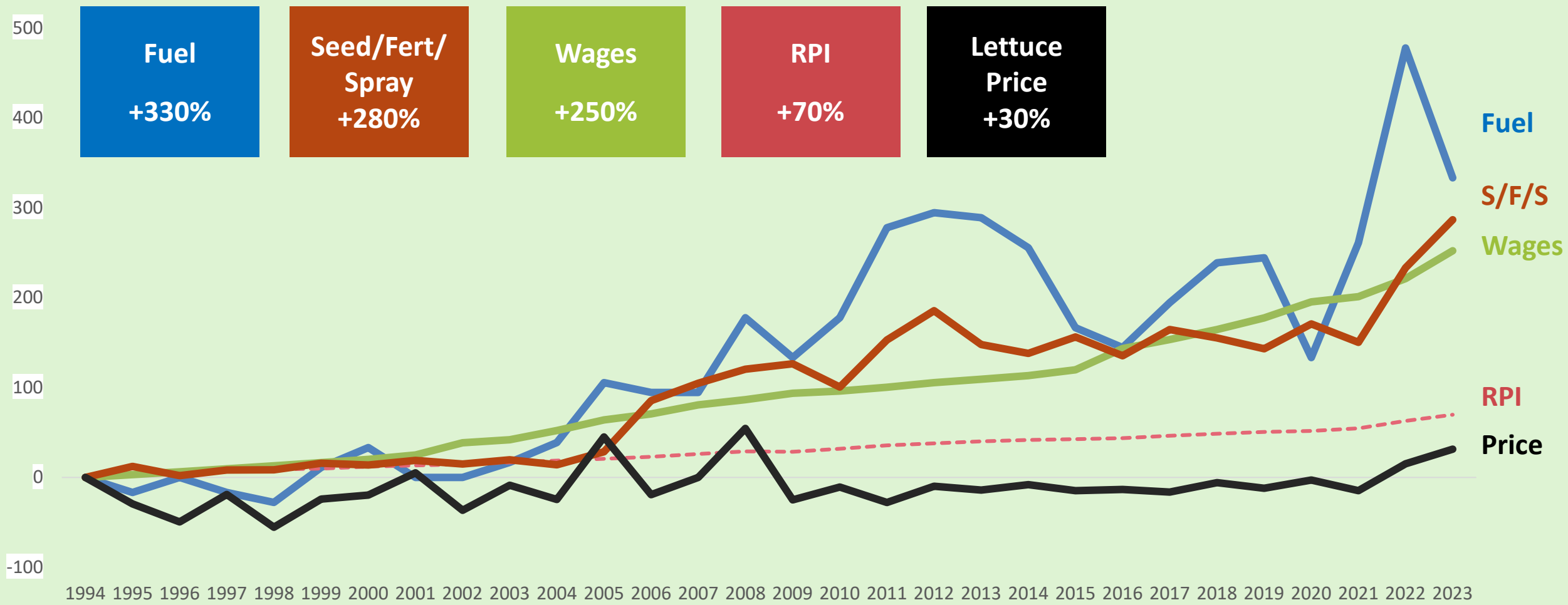
Profits



Regenerative Agriculture
Development Plan

Date:
March 20, 2025

Lettuce – UK farm costs & prices 1994 - 2023



Visible observations – what is the soil screaming at us!!!



Land cracked and blocky

Poor water infiltration

Massive, anaerobic clods

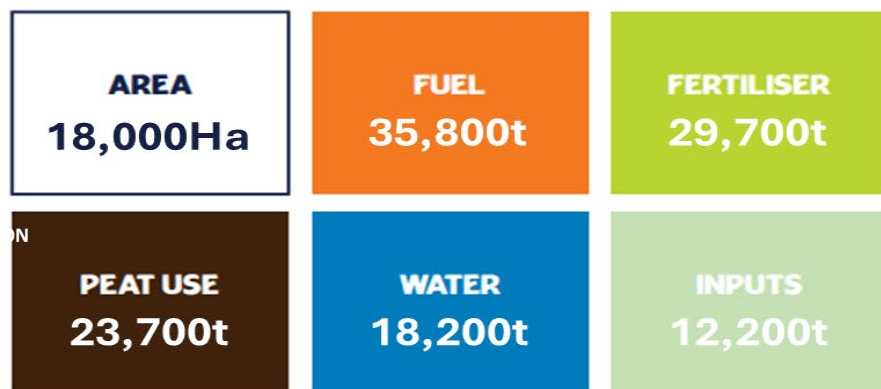
Little active biology

Heavy cultivations to manage poor structure only made the problems worse!

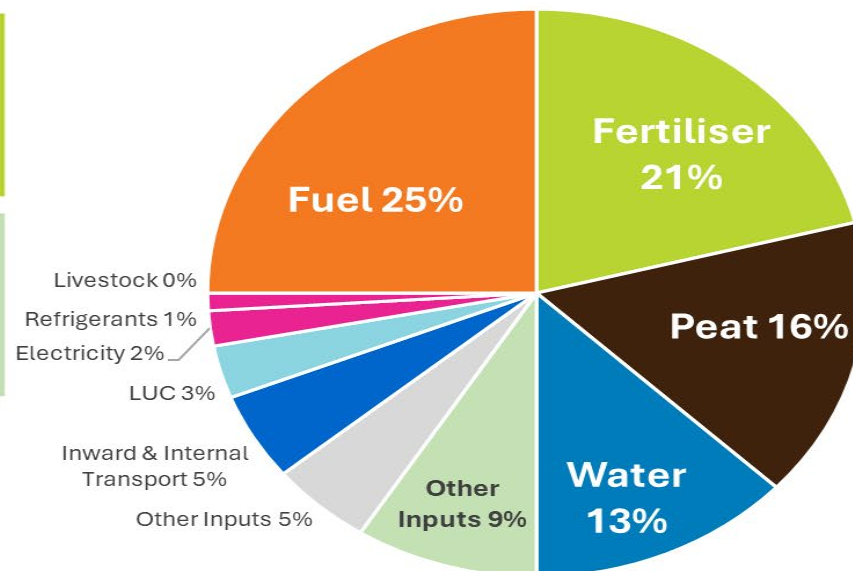


Reducing GHG emissions as part of our farming change agenda

G's FARMING EMISSIONS ARE 143,000T CO_2e
75% DRIVEN BY FUEL, FERTILISER, PEAT
AND WATER [ES ELECTRICITY]



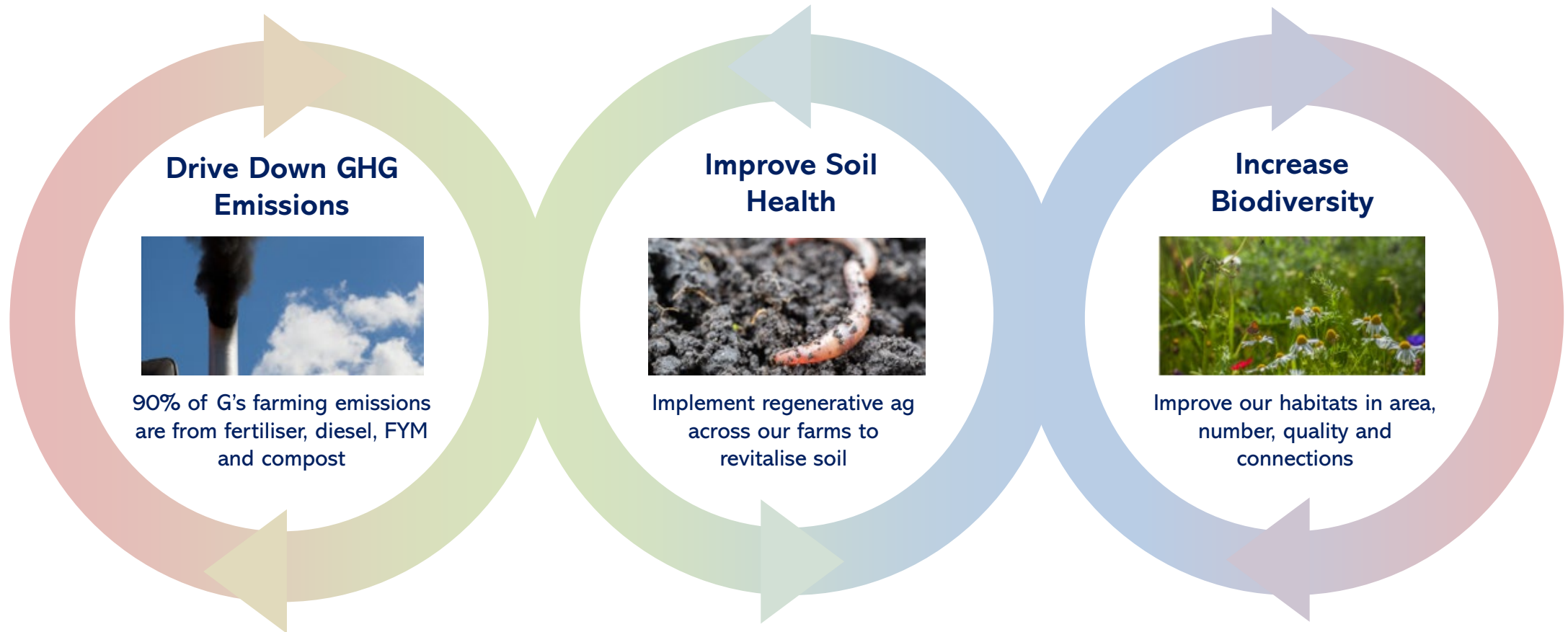
$\text{CO}_2\text{e}/\text{Ha}$



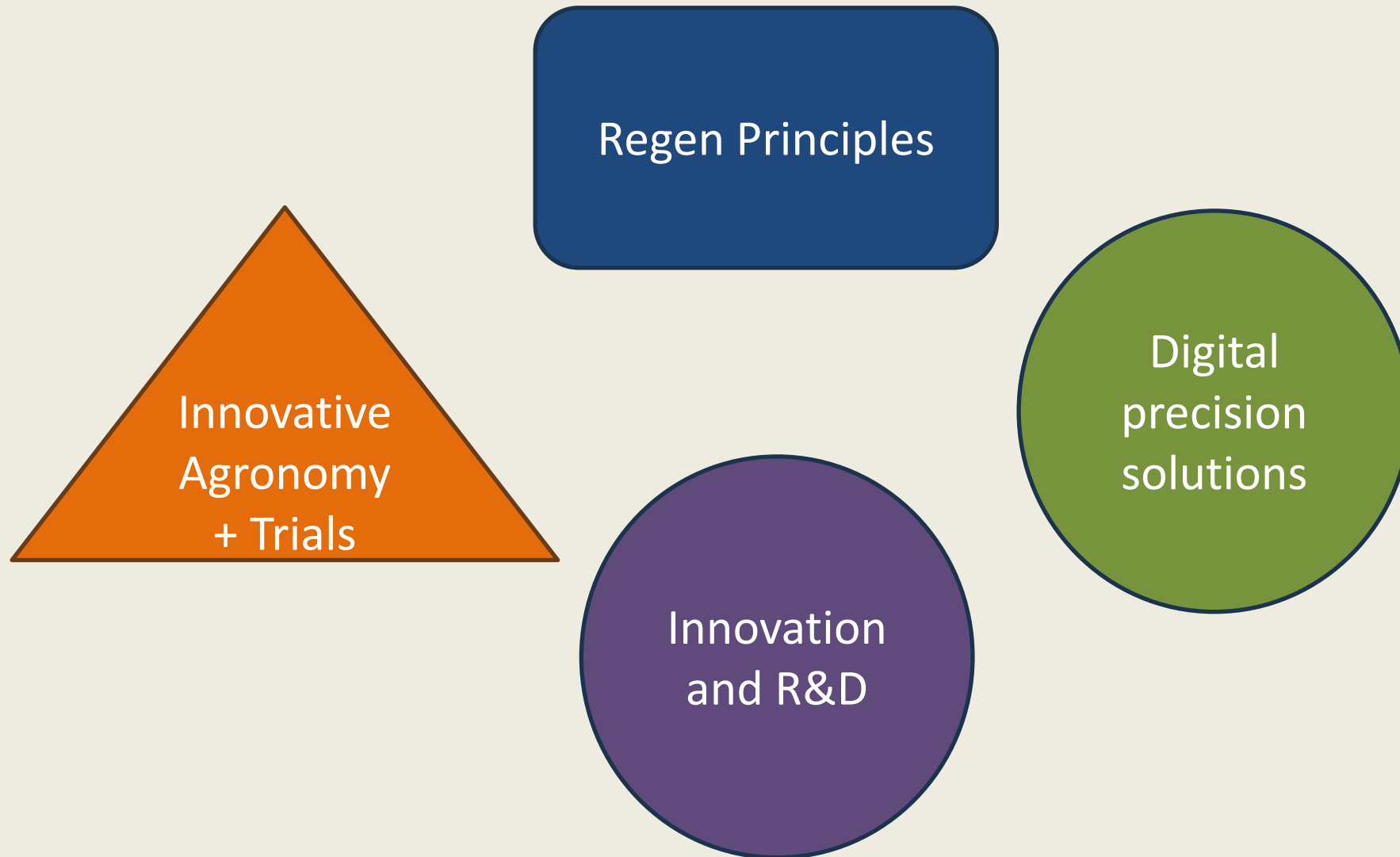
Why transition to a new farming paradigm?



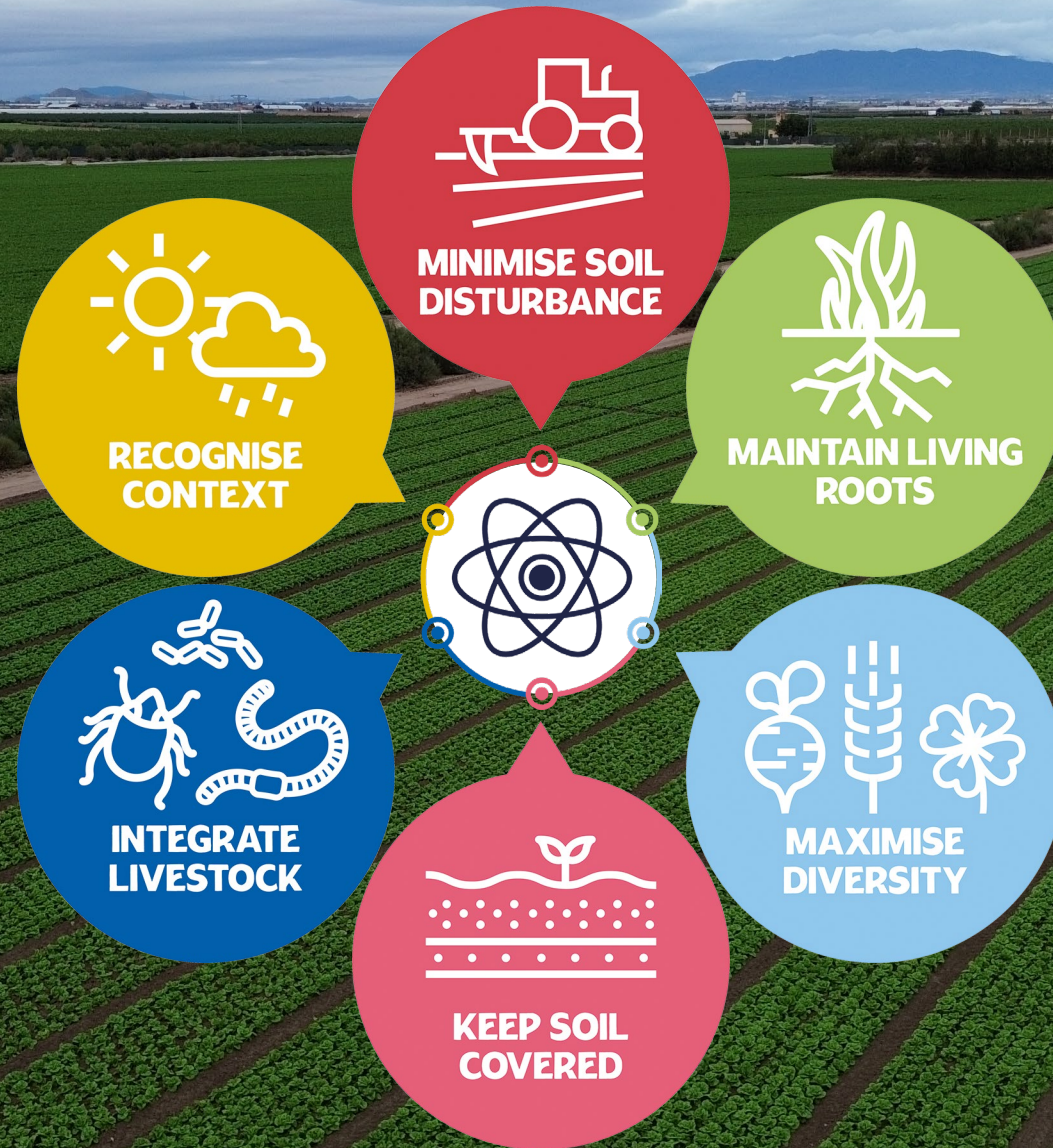
The G's sustainability agenda is broken down into 3 overlapping and **highly interdependent** pillars



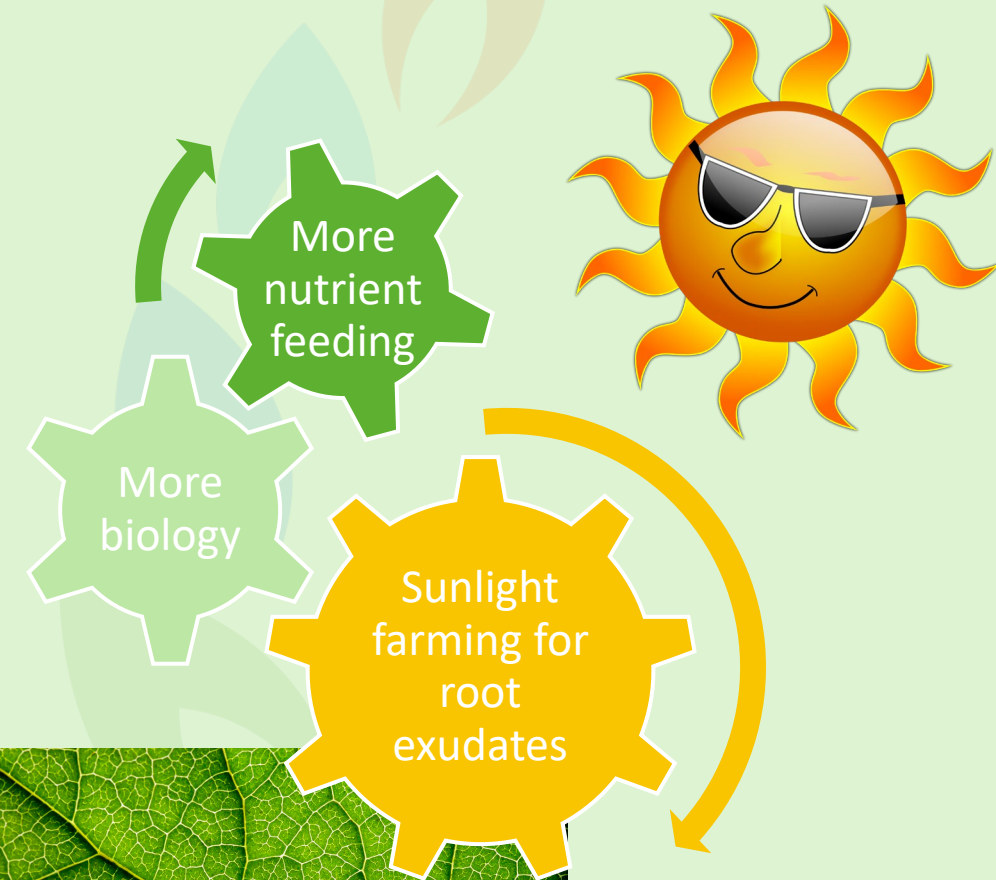
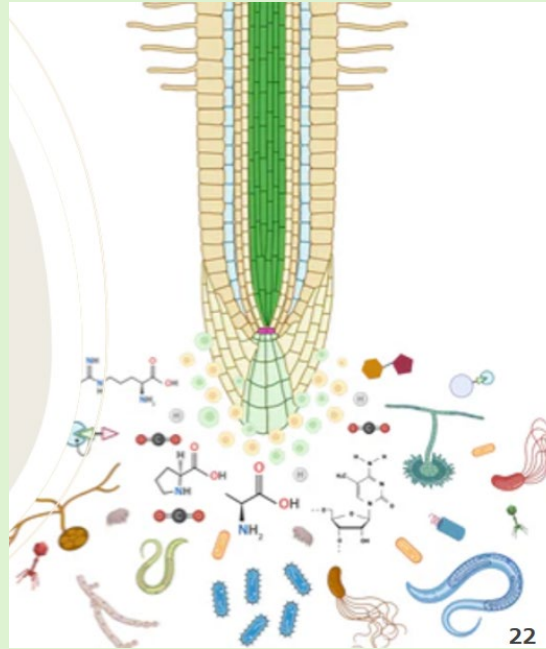
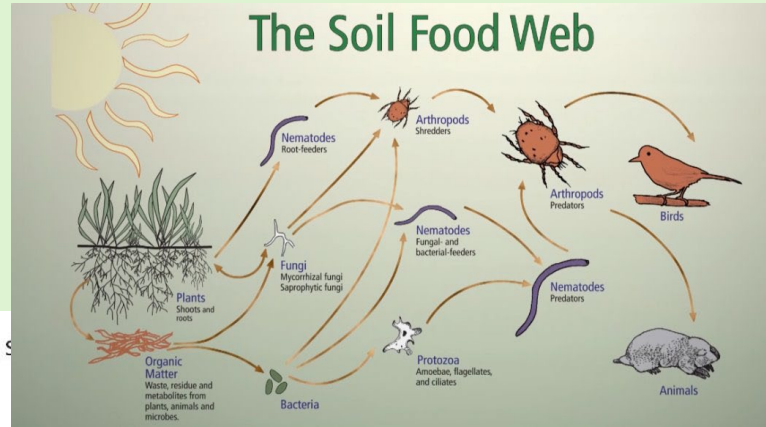
Resilience Strategy



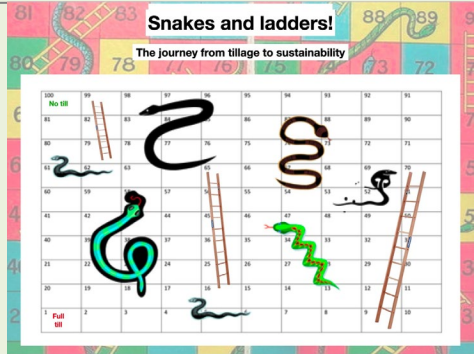
Growing innovation – Regenerative Agriculture



The Regenerative Agriculture flywheel / The liquid carbon cycle



The Regenerative Agriculture Flywheel: Good to great.



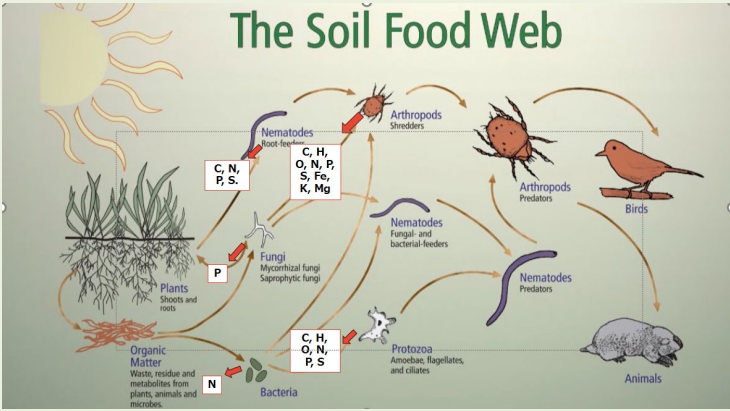
Build up.....

Optimised nutrition



Breakthrough
£ Profit increase & Carbon increase

Johnson Su accelerator



Minimise disturbance

Maintain living Roots

Maximise diversity

Keep soil covered

Integrate livestock

Recognise context

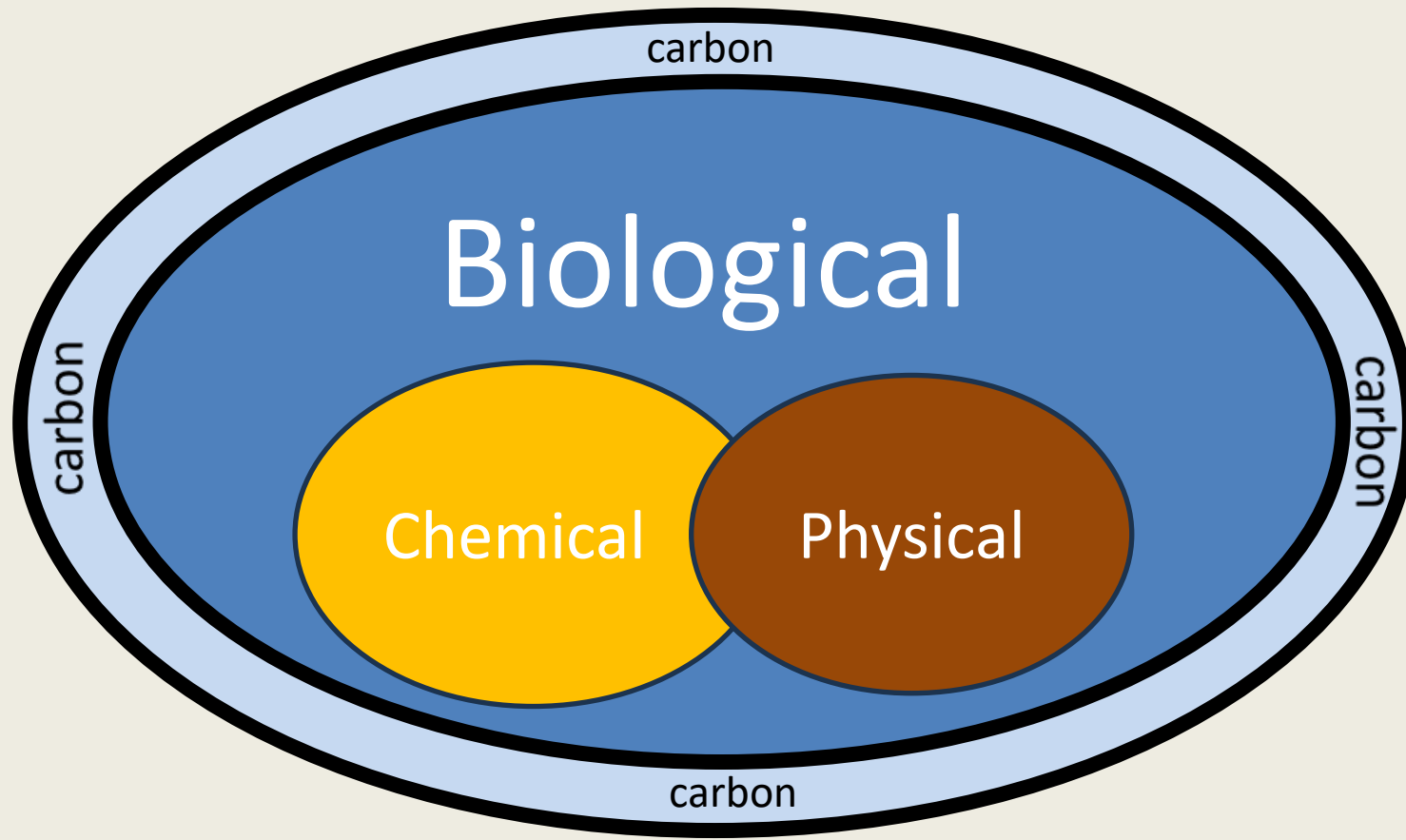
Disciplined people

Disciplined thought

Disciplined action



Carbon and biology drive soil function

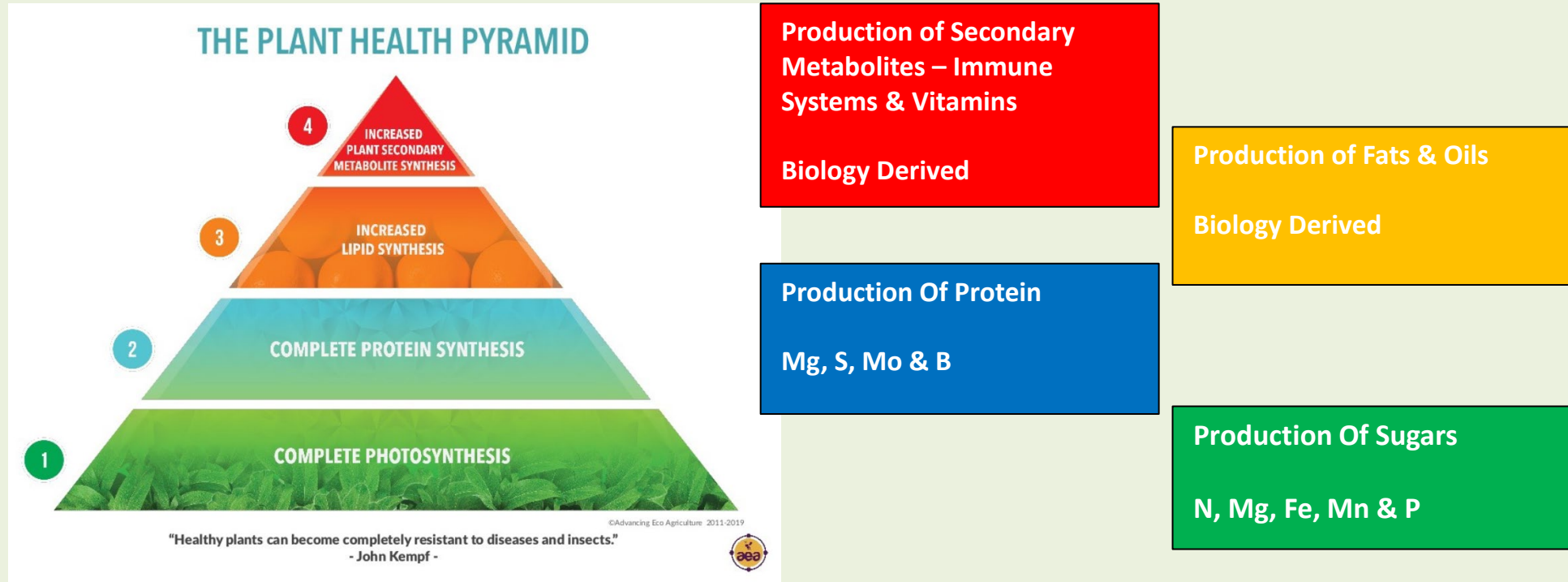


**Aiming for
regenerative soils,
healthy plants,
good yields,
healthy profits and
a healthy planet.**

Chemical is predominantly bio-chemical.

Physical is most importantly about aggregation, and porosity, which is a consequence of biological action.

Destination points: The plant health pyramid



Aim: To improve the nutritional balance of each of our crops, starting at the bottom and moving up the plant health pyramid.

Increasing photosynthesis and completing protein synthesis fixes plant cell soluble nitrogen containing molecules (nitrates and ammonia) into sugars and proteins.

The reduction in soluble nitrogen in sap increases plant resilience and reduces the incidence of disease and insect pests.

Implementing the principles: Progress at Cambridgeshire Farms

Reduction In
Soil
Disturbance

Keep Soil
Covered

Keep Living
Roots In The
Ground

Increase
Diversity

Livestock
Integration.



2018-2025

Ploughing ↓ 75%.

Aggressive deep tillage ↓ 87%.

Low disturbance tillage ↑ 0 to >2500ha.

2018-2025

Cover cropping ↑ from 836 to 2700ha.

Only 140 ha of 4000ha without cover crop in 2025-26.

96.5%

2018-2025

Percentage land with living root in the year:

61% to 83%.

↑

2018-2025

Rotational diversity ↑

4 to 21 plant types

(rolling 3-year average)

2018-2025

4000 sheep currently on farm. Grazing cover crop and cash crops.

Johnson Su inoculants in progress. 500,000 litre applied in 2025



G's Whole Farm Approach Customer Alignment



Project Title	 INCREASE SOIL HEALTH	 INCREASE BIODIVERSITY	 REDUCE EMISSIONS	 REDUCE WATER POLLUTION RISK	 OPTIMISE WATER USE	 REDUCE FOOD WASTE	 OPTIMISE CROP & ANIMAL HEALTH
DIGITAL FARMING PLATFORM							
COVER CROP							
PLANT TAPE							
ELLEPOT							
PEAT FREE PROPAGATION							
TERRAMAP							
SOIL BALANCING USING ORGANIC AMMENDMENTS							
PRECISION SOIL NUTRITION							
PLANT BY PLANT NUTRITION							
PLANT SAP AND TISSUE / GROWTH CURVE BUILDING							
JOHNSON SU AMENDMENTS							
GYP SUM AMENDMENTS							
REAL TIME NUTRITION							
FERTIGATION							
DRIP IRRIGATION							
SLUG MODELLING							
WATER TABLE MANAGEMENT							
FARM WIDE HABITAT ENHANCEMENT							
LIVESTOCK INCORPORATION							
TRAMLINE ENHANCEMENT							
CONTROL TRAFFIC HARVESTING							
COMPANION CROPPING							
LIVING MULCHES - STRIP TILLAGE							
REGEN VARIETY TRAITS							
PESTICIDE SUBSTITUTION							
EARLY DISEASE DETECTION SYSTEMS							



Building Crop Resilience

Regen
Principles

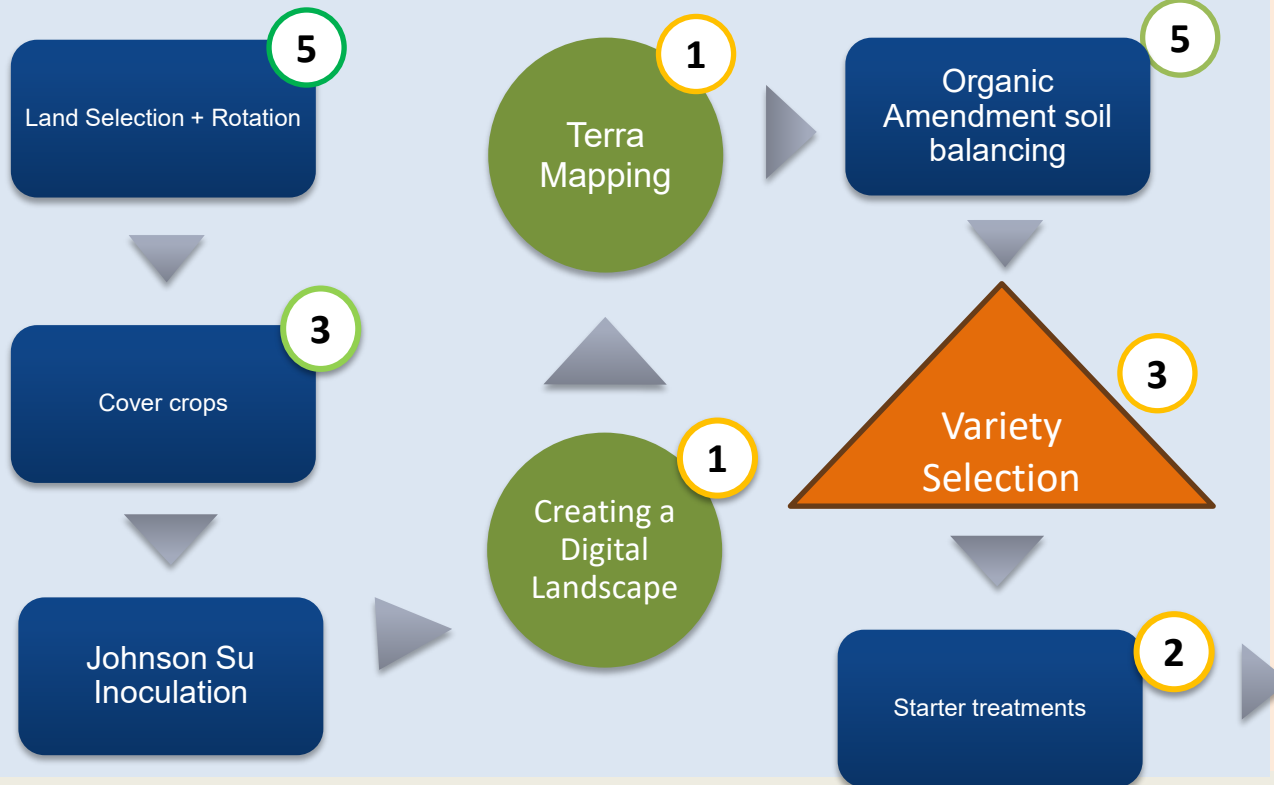
Innovation
and R&D

Digital
precision
solutions

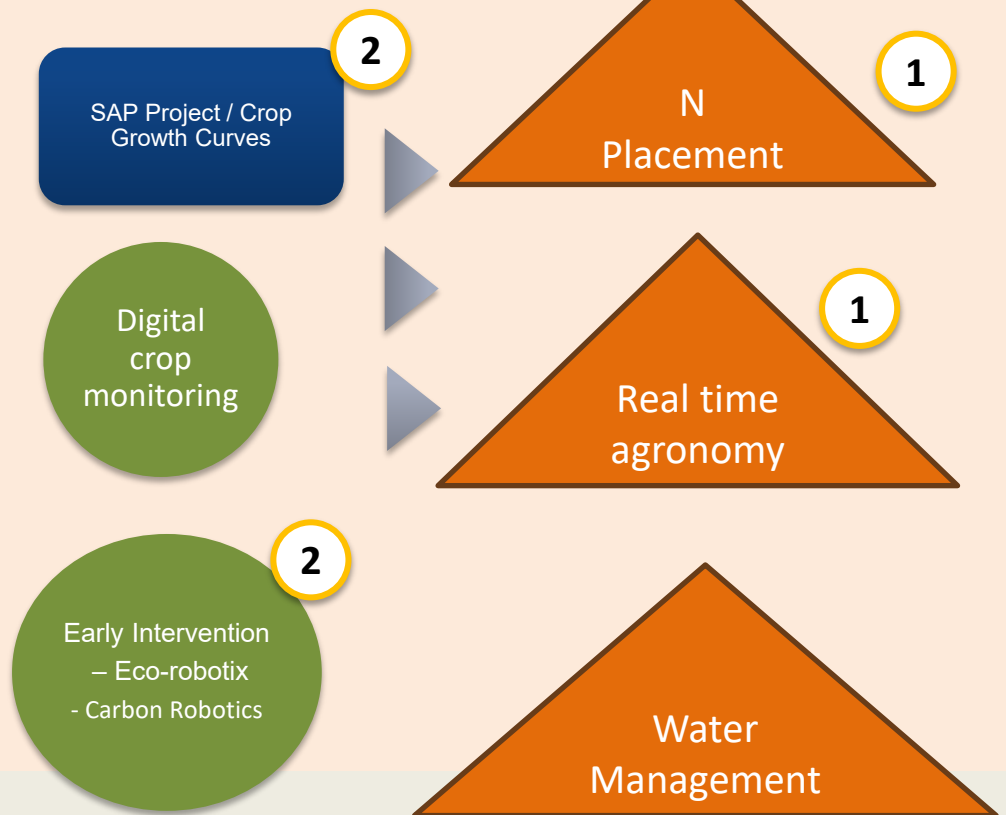
Innovative
Agronomy +
Trials



Creating optimal conditions



Post planting Intervention



○ ○ ○ = Number of years with trials / processes implemented.

Soil nutrition understanding: **How can we understand fundamental soil properties and variability on a zonal basis?**

Our Approach

- Map our soils biologically, chemically, and physically
- Interpret and formulate agronomic recipes in line with regen principles to unlock the full potential of our soils

Impact on Waste

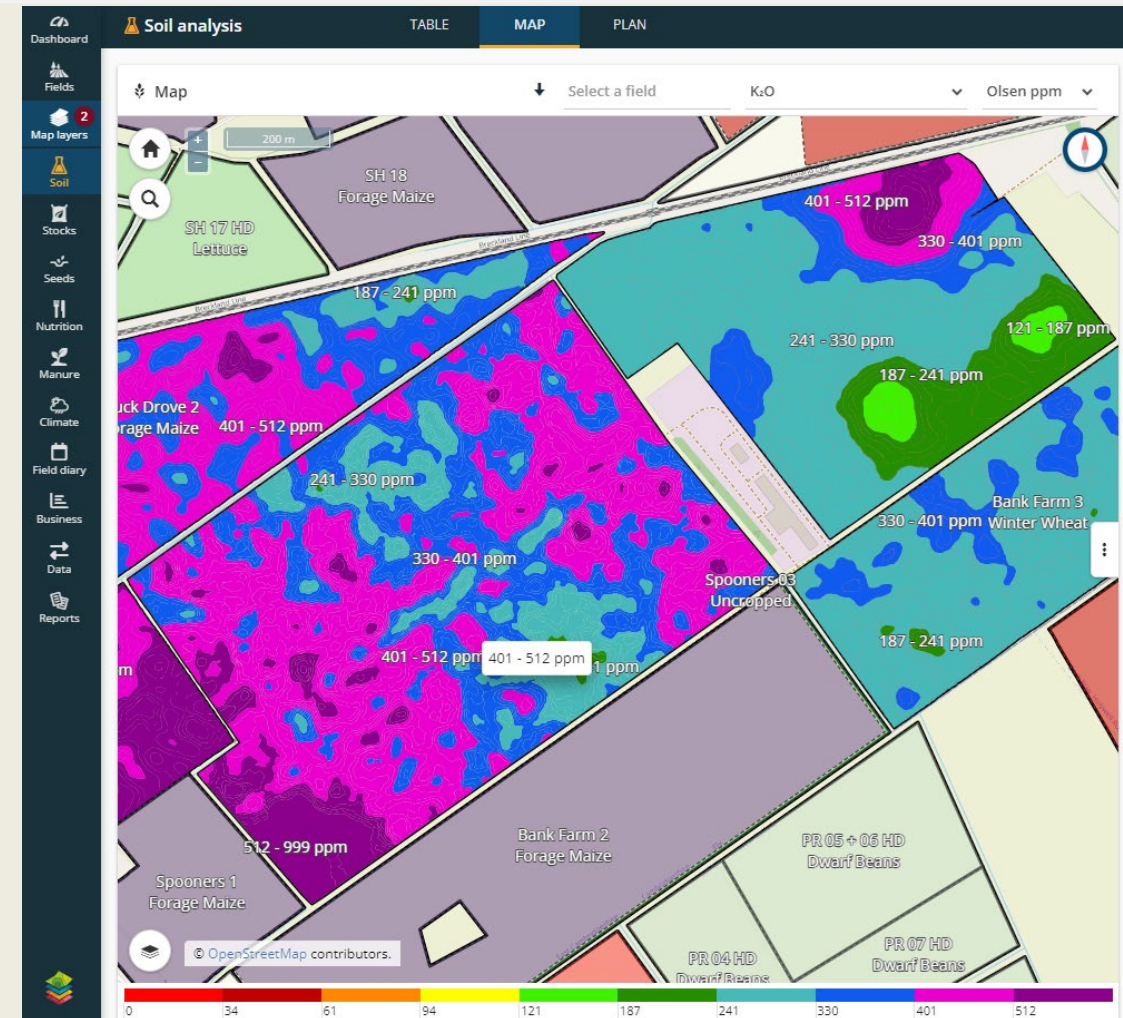
- By understanding and managing soil conditions effectively we can tailor all inputs to crop requirements

Our Position

- 2,000 hectares of the farm terra mapped, increasing by 2,000 hectares in the next year
- Onions growing fields to be terra mapped intime on rented land.

Efficiencies

- Eliminated – all potassium based fertilisers
- Variable rate applied Organic amendments to target low spots.
- Gypsum introduced as key amendment



Soil borne disease challenges: **How do we start the fundamental change in our soil?**

Our Approach

- Maximise soil diversity whenever possible
- Increase Fungi : Bacteria ratio
- The principle of the “biological flood” relies on the theory of competitive exclusion, with each niche inhabited by numerous non-pest species.

Impact on crops

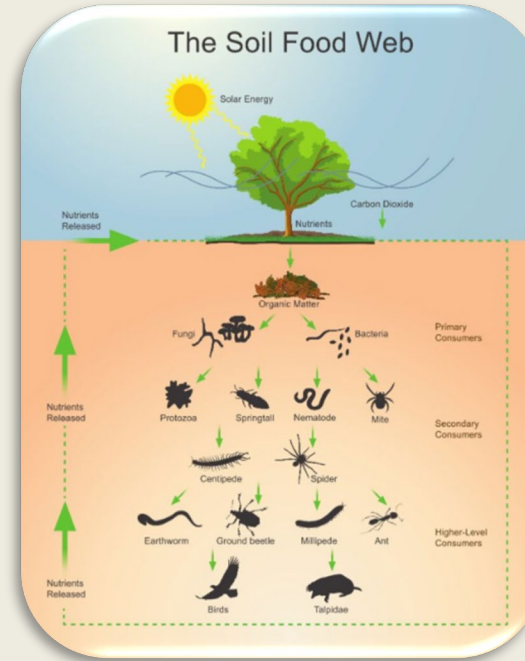
- Increased plant establishment rate and uniformity
- Increased crop size
- Different nutrient availability and uptake

Our Position

- Largest Johnson Su complex in the UK to our knowledge
- 6000 ha of inoculum
- Each reactor can be tailored to specific soil requirements

Efficiencies

- Reduced starter fertiliser by 50% in salads
- Reduced seed treatments across multiple crops





Input step change: **How can we maximise crop health and optimum growth**

Our Approach

- Data driven applications
- Targeted plant nutrition to maximise plant health
- Nutrient formulations that are plant and soil friendly
- Big driver for future mildew control

Impact on Waste/Inputs

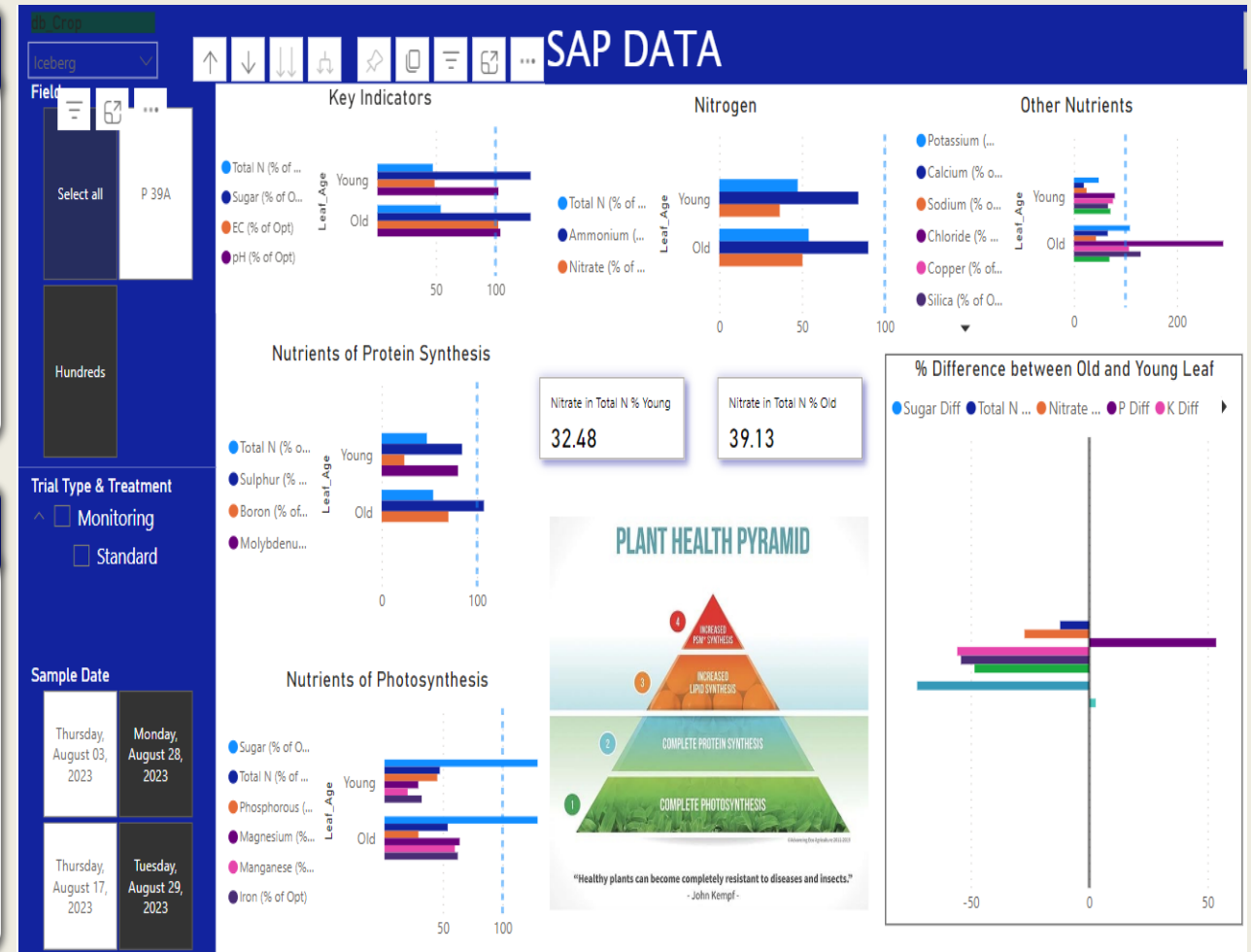
- Provides real time data flow to enable input reduction
- Micro nutrition precision focus
- Foundation to future pesticide reductions

Our Position

- Largest European user of Novacrop Control sap analysis lab
- Strategic partners with Sustainable Soil Management Ltd
- Developed our own analysis dashboard

Efficiencies

- Applied N reduction by 40% on lettuce
- Allow future developments of slow release soil N options
- Nitrogen elimination in potatoes





Crop optimisation: **How can we assess variability across ALL our Iceberg plants?**

Our Approach

- Fly crop with a drone to identify each crop geographically and collect meta data for each lettuce
- Provide growers with live crop data aiding agronomic input decisions

Impact on Waste/Inputs

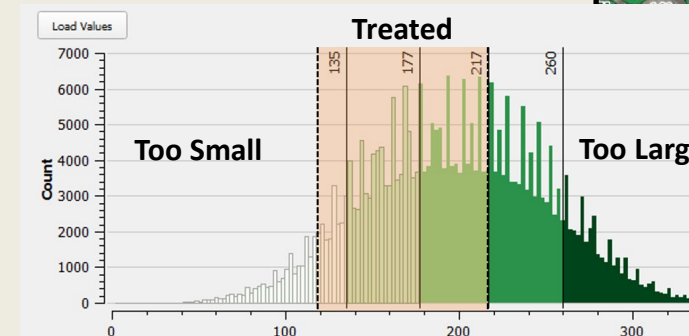
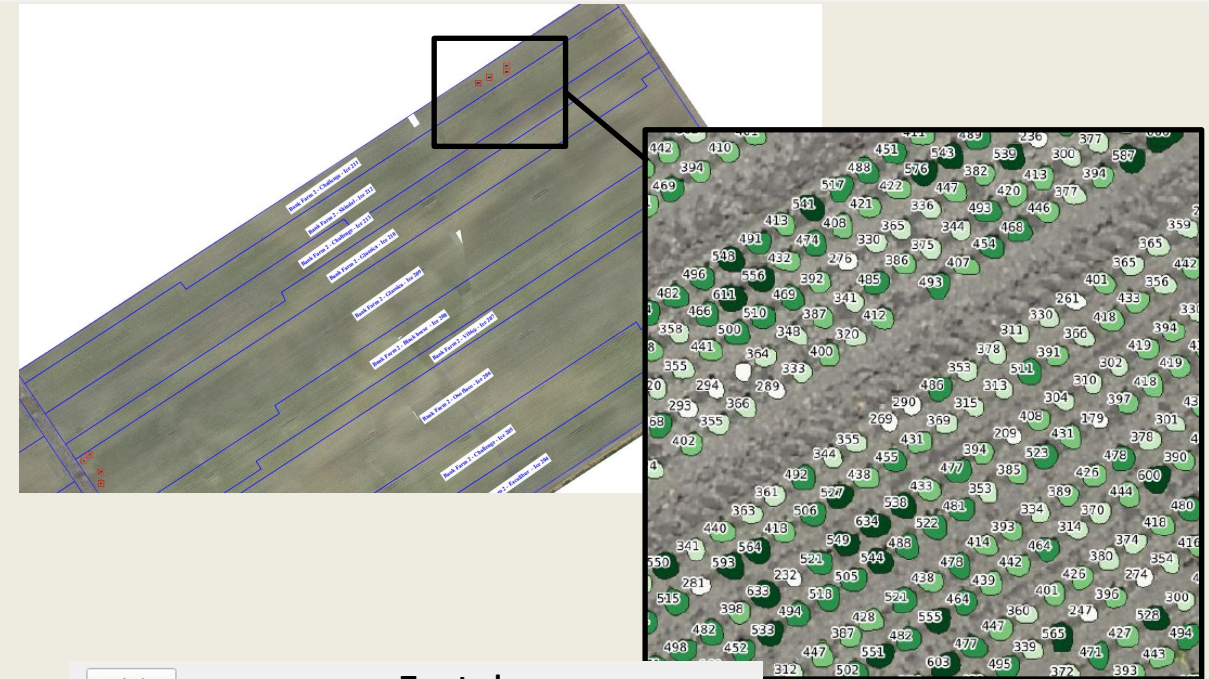
- Generates actionable data about the crop population at scale (benchmarking)
- Macro... pest control, irrigation, crop covers
- Micro... plant by plant interventions

Our Position

- Established across our Iceberg growing, all fields have been flown since 2015
- To our knowledge, one of two global lettuce companies using this technology (Bonipak, USA)

Efficiencies

- Facilitator





Crop optimisation: **How we act on our crop variability data?**

Our Approach

- To create plant by plant prescriptions allowing injection fertiliser applications on the selected plants

Impact on Waste/Inputs

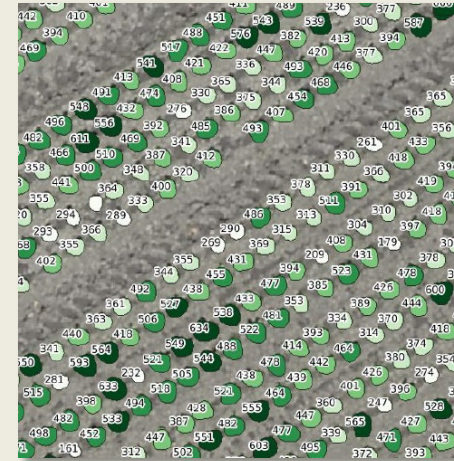
- Reduce size variability at harvest
- Optimise nitrogen input
- Optimise crop health and shelf-life
- Optimise retail percentage

Our Position

- Established across our Iceberg growing
- First globally to create and execute plant by plant nutrition

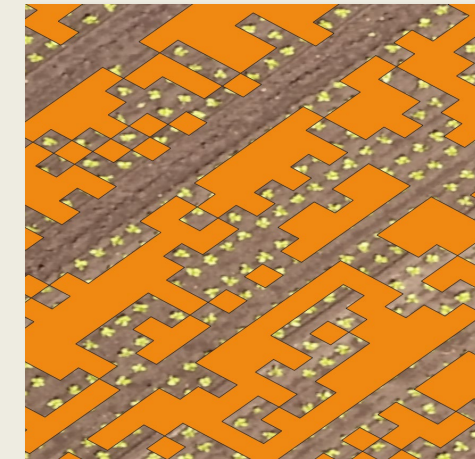
Efficiencies

- 40% nitrogen reduction across season
- 50% nitrogen reduction during summer (wk 26-32)
- 75% nitrogen reduction in some fields



solvi

copter-cam



Precision Planting®



Visible Observations – documenting change over time

2025



Connectivity through the profile

Roots and pore spaces down to 1m

Visible active biology above and below ground

Minimal and very shallow cultivation required pre-planting

