

A photograph of a lush field filled with a mix of purple and yellow wildflowers. The field stretches towards a distant treeline under a grey, overcast sky. The text is overlaid on the right side of the image.

# Regenerative agriculture

How food can become a  
solution to our problems

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WHAT IS **WRONG** WITH THIS PICTURE?





# WHAT IS **WRONG** WITH THIS PICTURE?





**THIS IS NOT UNIQUE**



NASA 2003

# MEANWHILE, WHAT IS HAPPENING TO FARM ECONOMICS?

Between 2005 and 2016 in Belgium, what happened to...

Average farm size

↗37%

The number of farms?

↘28%

Net enterprise income from agriculture?

↘41%

Source: Eurostat

# 1. Diagnosing the **problem**

# MODERN INDUSTRIAL AGRICULTURE IS **DEGENERATIVE**





# WHAT IMPACT IS THIS HAVING ON **FARMLAND**



Soil depth in Iowa **has halved** since intensive cultivation began

Source: Grantham, 2018



## AND WHAT IMPACT ON OUR **FOOD PRODUCTION SYSTEM?**

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1/3

The amount of  
arable farmland  
lost in the last 40  
years, globally

*Source: University of Sheffield, 2015*

60

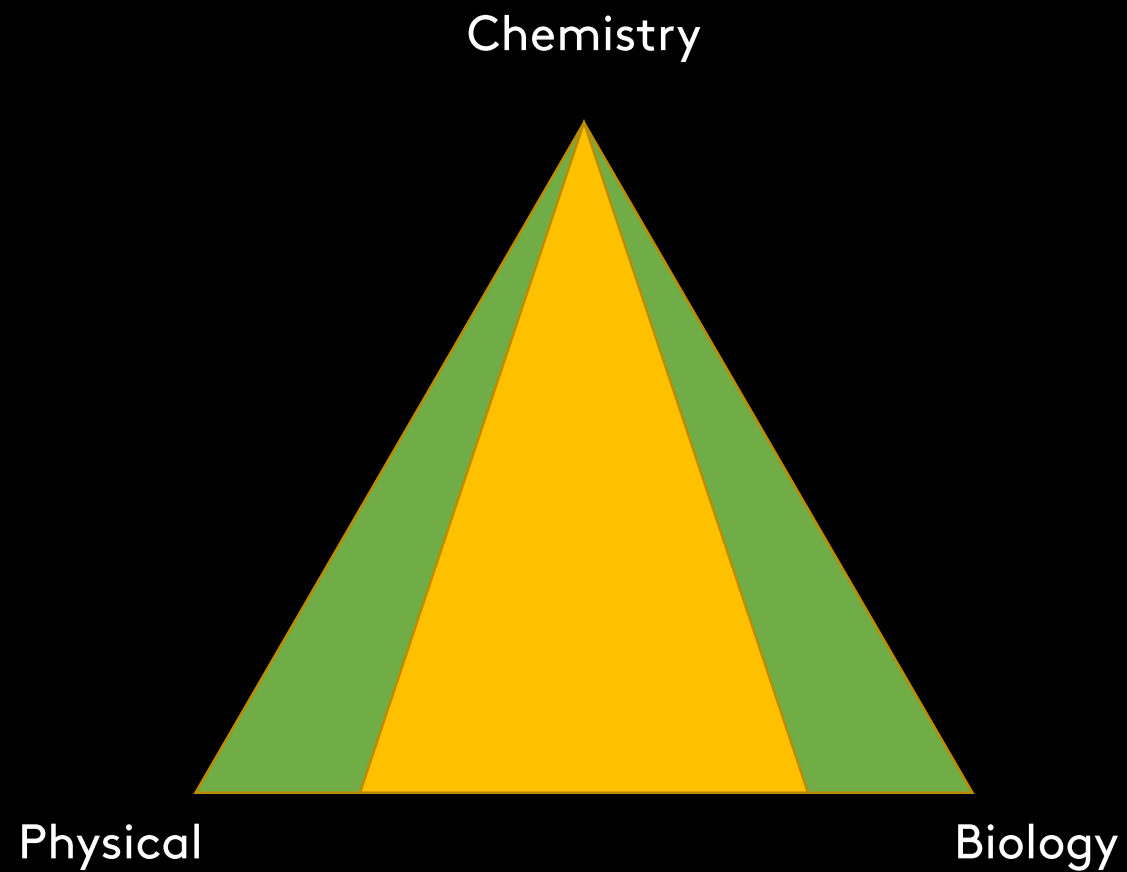
The number of good harvests  
left at current rates of  
degradation

*Source: UN FAO, 5 years ago*



# HOW DID WE **GET HERE?**

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# WHERE IS THIS **TAKING US?**

## Economics



### UNSUSTAINABLE

- Producers largely not profitable
- Exposed to input price risk & output is commoditised
- Vulnerable to drought & flood

## Health



### UNDERMINING

- Risk of antibiotic resistance
- Low nutrient density of food
- Concern over health impacts of agrochemicals

## Environment



### DEGENERATIVE

- Soil erosion and loss of fertility
- Agrochemical run-off
- Monocultures over biodiversity
- Net carbon emitter



## CLOSE UP ON CARBON



# ATMOSPHERE

**750 Billion tons** of Carbon

# BIOSPHERE

**550 Billion tons** of Carbon

# PEDOSPHERE

**2300 Billion tons** of Carbon

We've removed **136 Billion** tons of carbon from the soil since the industrial revolution

# CLOSE UP ON CARBON



**Andrew Voysey** @AVoysey · Mar 27

We should discuss soil as much as we talk about coal | Bill Gates



**We should discuss soil as much as we talk about coal**

Nearly a quarter of all greenhouse gas emissions come from agriculture.

[gatesnotes.com](https://gatesnotes.com)



## 2. Opening up to a **solution**

# IT'S CALLED **REGENERATIVE AGRICULTURE**





## A DEFINITION

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Farming and grazing practices that, among other benefits, reverse climate change by **rebuilding soil organic matter** and **restoring degraded soil biodiversity** – resulting in both **carbon drawdown** and **improving the water cycle**.

A close-up photograph of three small green seedlings growing out of dark, rich soil. The seedlings are arranged in a diagonal line from the bottom left towards the top right. The leaves of the seedlings are covered in numerous small, clear water droplets, suggesting a recent watering or misting. The background is a soft, out-of-focus gradient of dark green and brown, creating a sense of depth and focus on the plants. The overall mood is one of growth and renewal.

**Rebuild** natural fertility

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**Replenish** water sources



**Restore** carbon to the soil





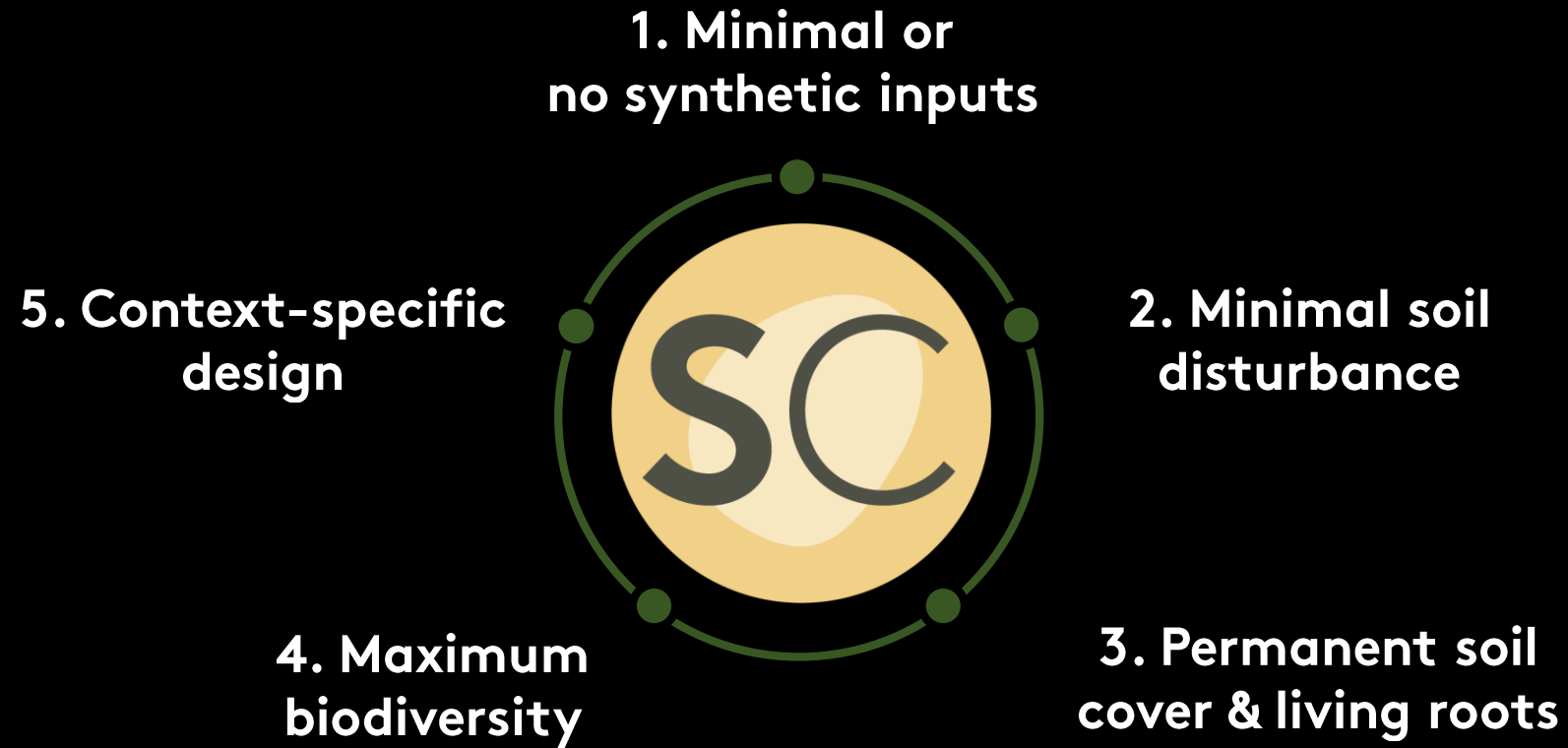
# IT IS ALL DRIVEN BY THE **BIG EXCHANGE**



Plants can give away **over half** of the carbohydrates they produce

# HOW DOES **REGENERATIVE AGRICULTURE** WORK IN PRACTICE?

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# WHO ARE THE **FIRST MOVERS**?

## Business



Target **100% regenerative sourcing** in France by 2025; \$6m on soil health research in US



Plans to **regenerate 1m acres** of US crop land by 2030

## Government



California offers **\$7.5 million** to **farmers for carbon farming**; five other States following suit



India's Andhra Pradesh is expanding **chemical-free practices** from 160,000 farmers to 6 million



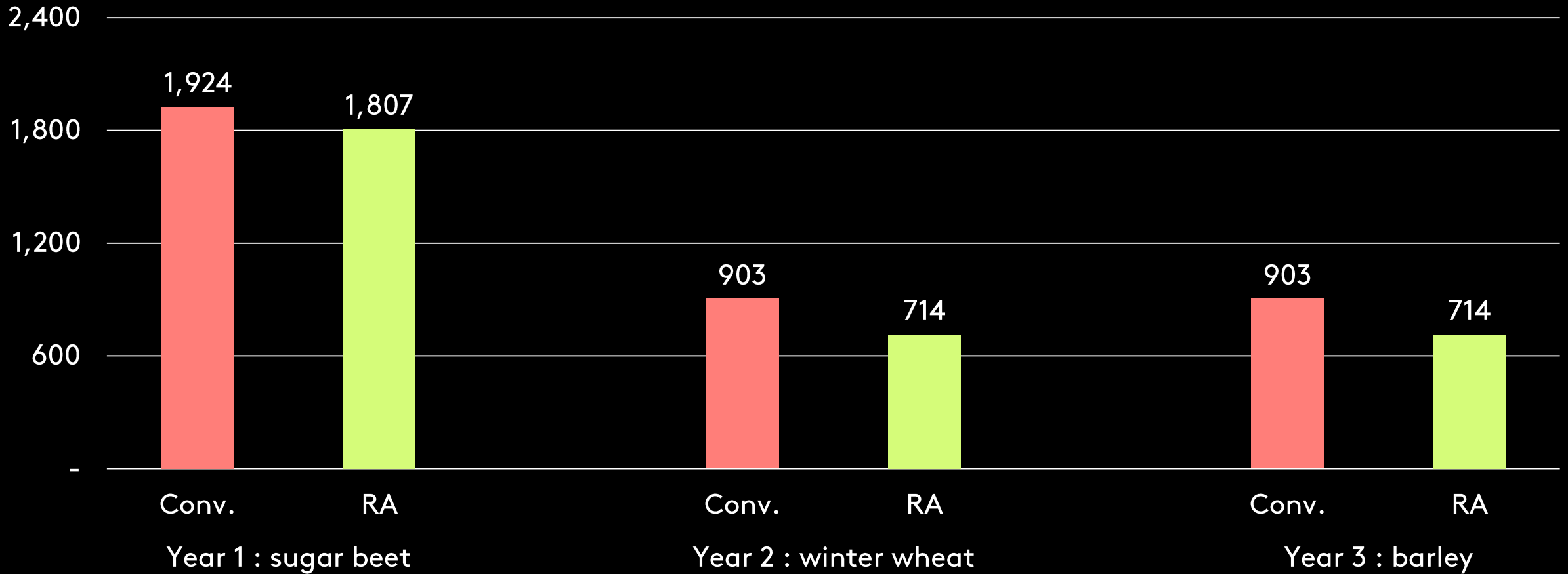
**Financing regenerative agriculture** workshop via Green Finance Initiative – April 8, London

# 3. Achieving **superior economics**



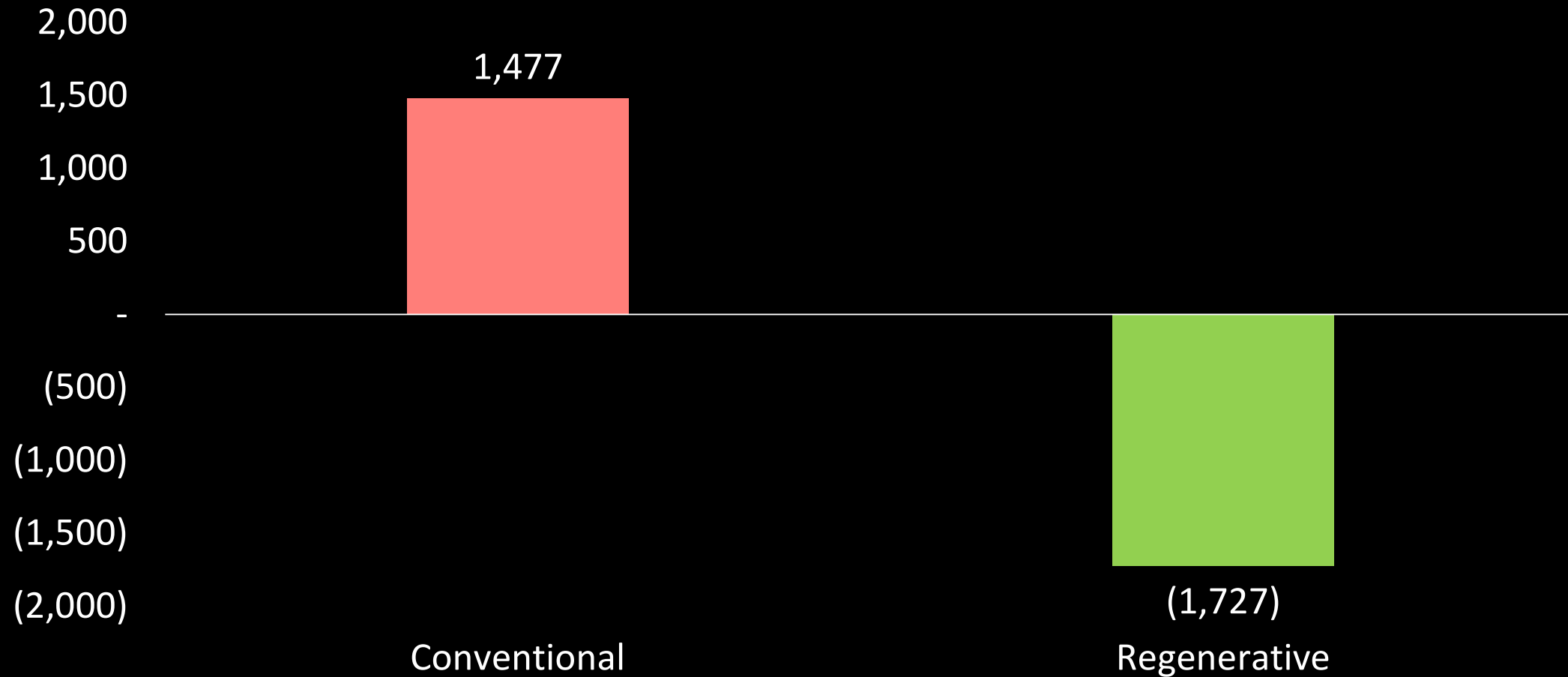
# IMPROVING FARM PROFITABILITY FROM YEAR ONE

Cost structure (EUR/ ha)



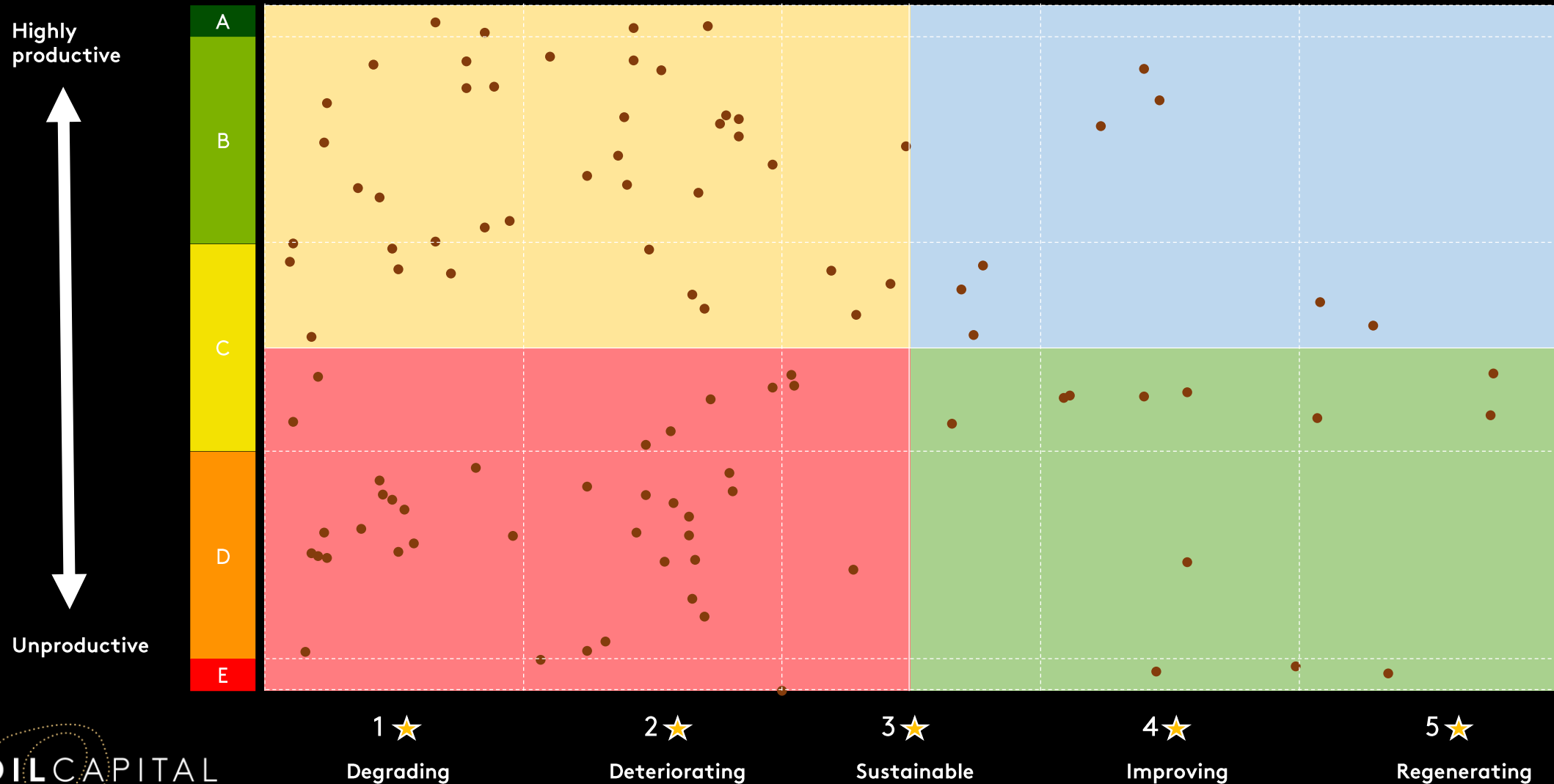
# THE POTENTIAL TO CAPTURE CARBON

Total GHG emissions (kg CO<sub>2</sub>e/ ha)





# A NEW WAY TO LOOK AT A FARM PORTFOLIO



# HOW DO THESE SUPERIOR ECONOMICS MATERIALISE FOR THE FARMER'S PARTNERS?

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Access to the benefits without increasing the cost structure

1. Avoided business interruption costs

2. Maintaining a licence to operate

3. Premium prices on the healthiest food nature can grow

4. Improved market share with millennial awareness



# SOME ARE POSITIONING THIS AS CENTRAL TO VALUE CREATION

## Differentiation for growth



All « organics » categories outpacing category growth by +7% <sup>(1)</sup>

(1) Euromonitor



Grassfed

## Soil & Farmers



## Optimize Cost Structure

Decrease volatility  
Expl. Cost Performance Model (CPM)  
Long term approach



Economic viability for the farmers



Cost management for Danone

# THE LAST WORD

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"In 80 years, current agriculture will be simply infeasible for lack of good soil.

We must change our system completely to make it sustainable, which, critically, involves reducing erosion to almost zero by using no-till or low-till farming combined with cover crops."

*Source: The Race of our Lives Revisited, GMO White Paper, August 2018*





Soil  $\pi$  Capital