Workshop 2:

Leveraging digital tools and other innovative models, measures and techniques in the agrifood sector to boost competitiveness

14.30 - 16:00

3-4 December 2025, Bologna

This meeting is organised by

Sustainable Competitiveness: Combining Agri-Tech and Ecological Intelligence

LIFE Platform Meeting

Future-Proofing Europe's Agri-Food Sector: Innovation, Resilience, Sustainability, and Competitiveness

Carlos Ruiz

SEO/BirdLife – LIFE Olivares Vivos +

December, 4TH

Setting
THE STAGE

A CHANGING CONTEXT FOR EUROPEAN AGRICULTURE

- ❑ Climate and water stress.
- ❑ Declining biodiversity.
- ❑ Soil degradation.
- ❑ Input dependency and market volatility.

Rethinking COMPETITIVENESS

RETHINKING COMPETITIVENESS

- From yields and costs, to resilience, quality & ecological intelligence
- Competitiveness ≠ produce more.
- Competitiveness = produce better, with fewer risks..
- Sustainability is the pathway to competitiveness.

Why the current model IS NOT COMPETITIVE

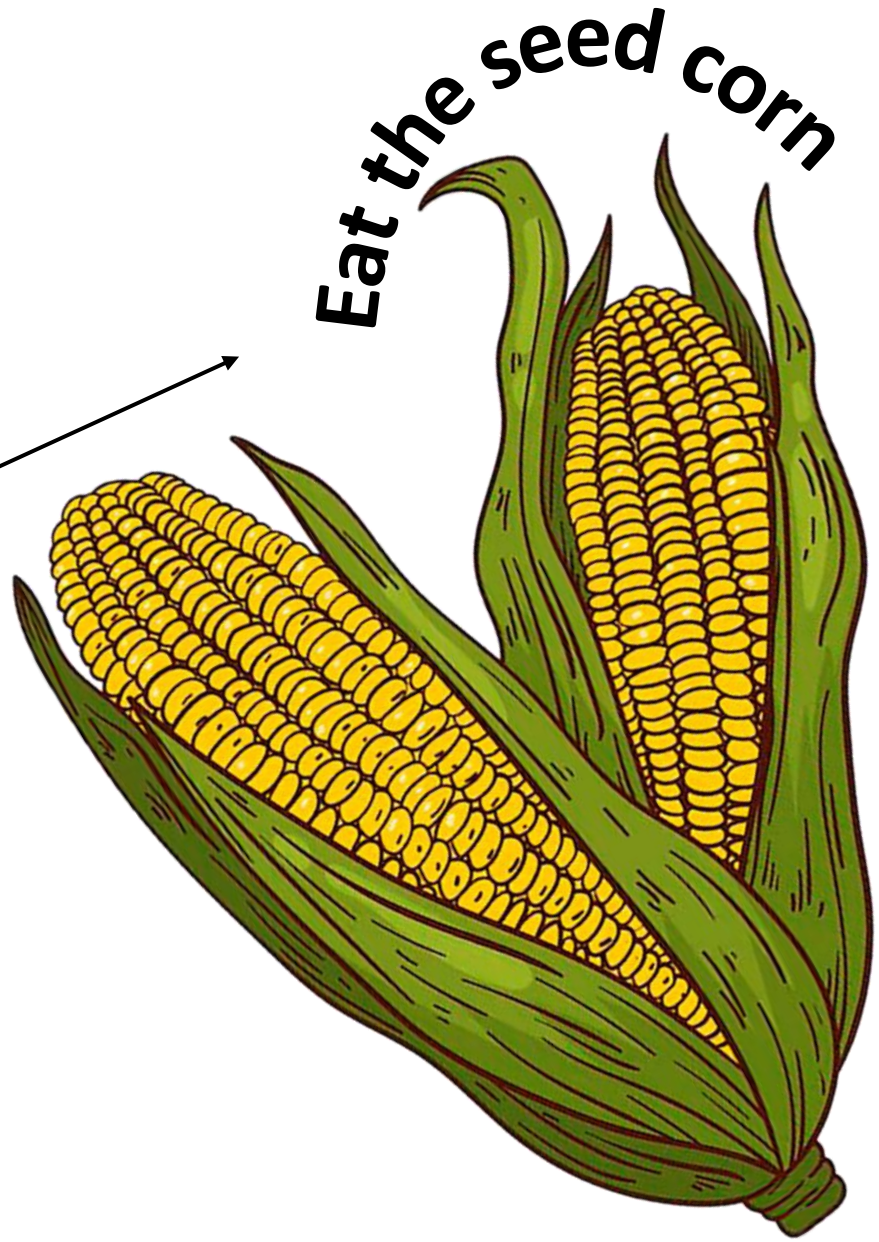
STRUCTURAL WEAKNESS

Heavy dependency on inputs

Soil, water and biodiversity loss ends in lower productivity.

“Race to the bottom” in prices.

Short-term decisions vs long-term damage.



KEY IDEA

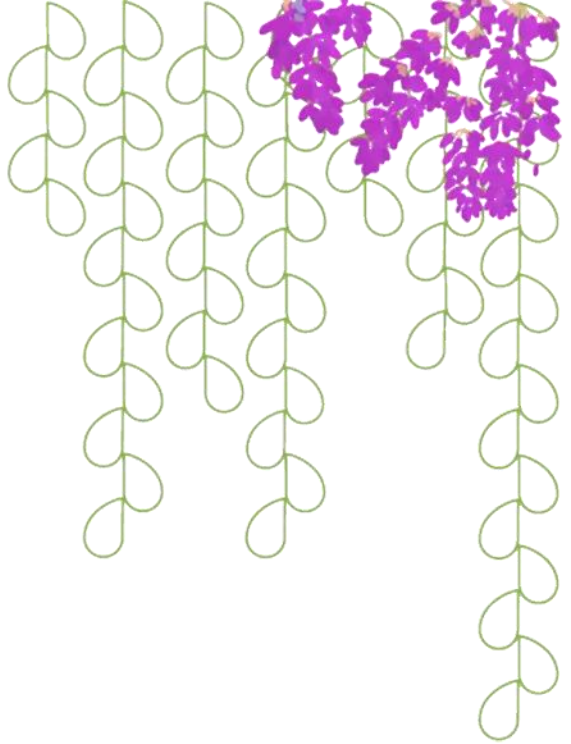
A FARM THAT DECREASES ITS NATURAL CAPITAL

IS NOT COMPETITIVE

Farmers must optimize resources and improve productivity:

- Using the best available technologies
- While protecting the environment and reducing impacts

What sustainable COMPETITIVENESS REQUIRES



FIVE FOUNDATION PILARS

1. Reduce inputs without reducing yields
2. Recover ecological balance
3. Improve resource efficiency
4. Reduce environmental impacts
5. Make sustainability visible and valuable

Tools:
A COMBINED TOOLBOX

TWO FAMILIES OF TOOLS

Precision
Digital
Automation

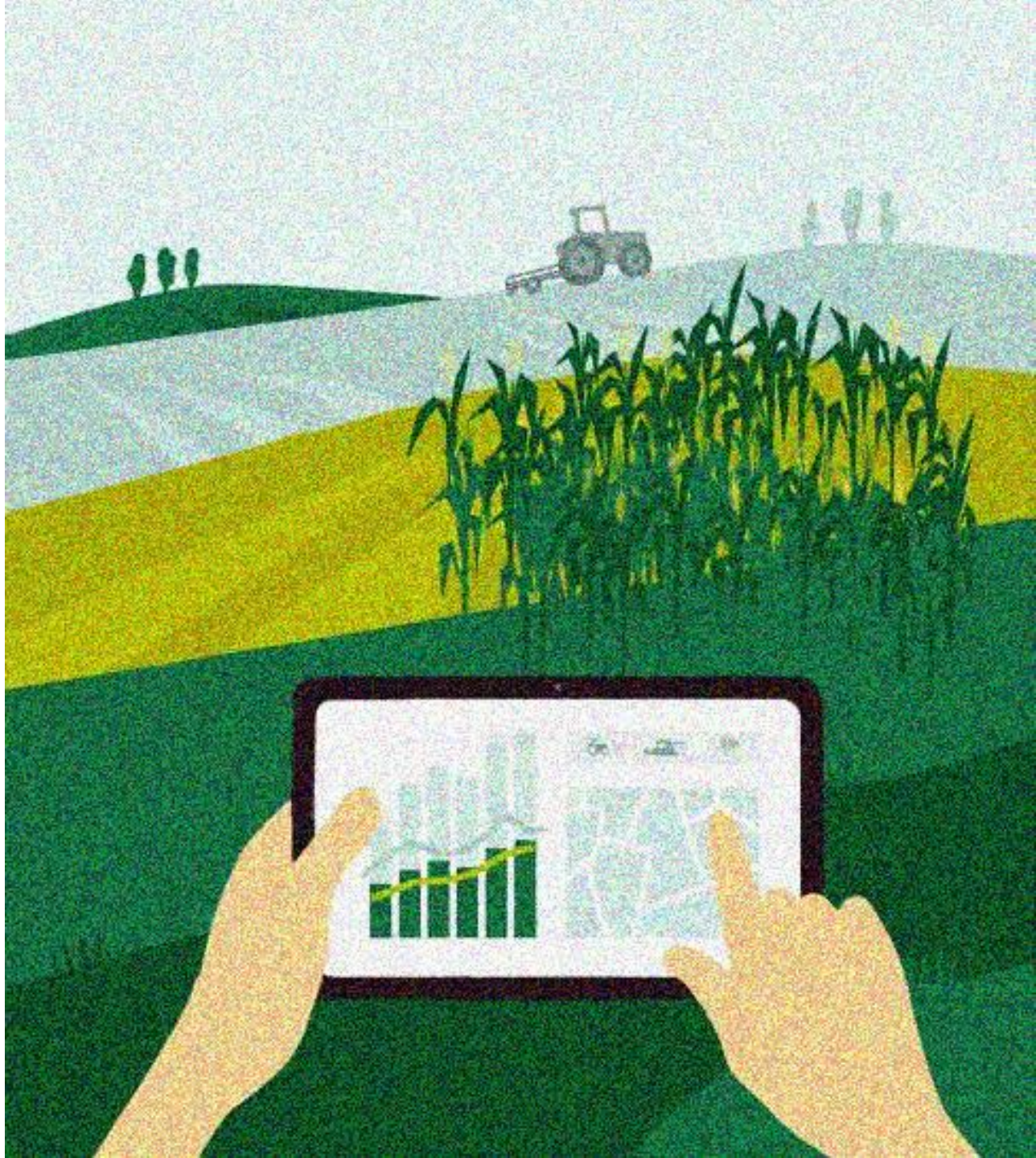
+

Biodiversity
Soil
Landscape

Agri-tech TOOLS

SMART FARMINT FOR SUSTAINABLE COMPETITIVENESS

- Precision farming.
- Smart irrigation.
- AI for pest management.
- Robotics.
- Carbon monitoring (MRV).
- Digital business planning and traceability.



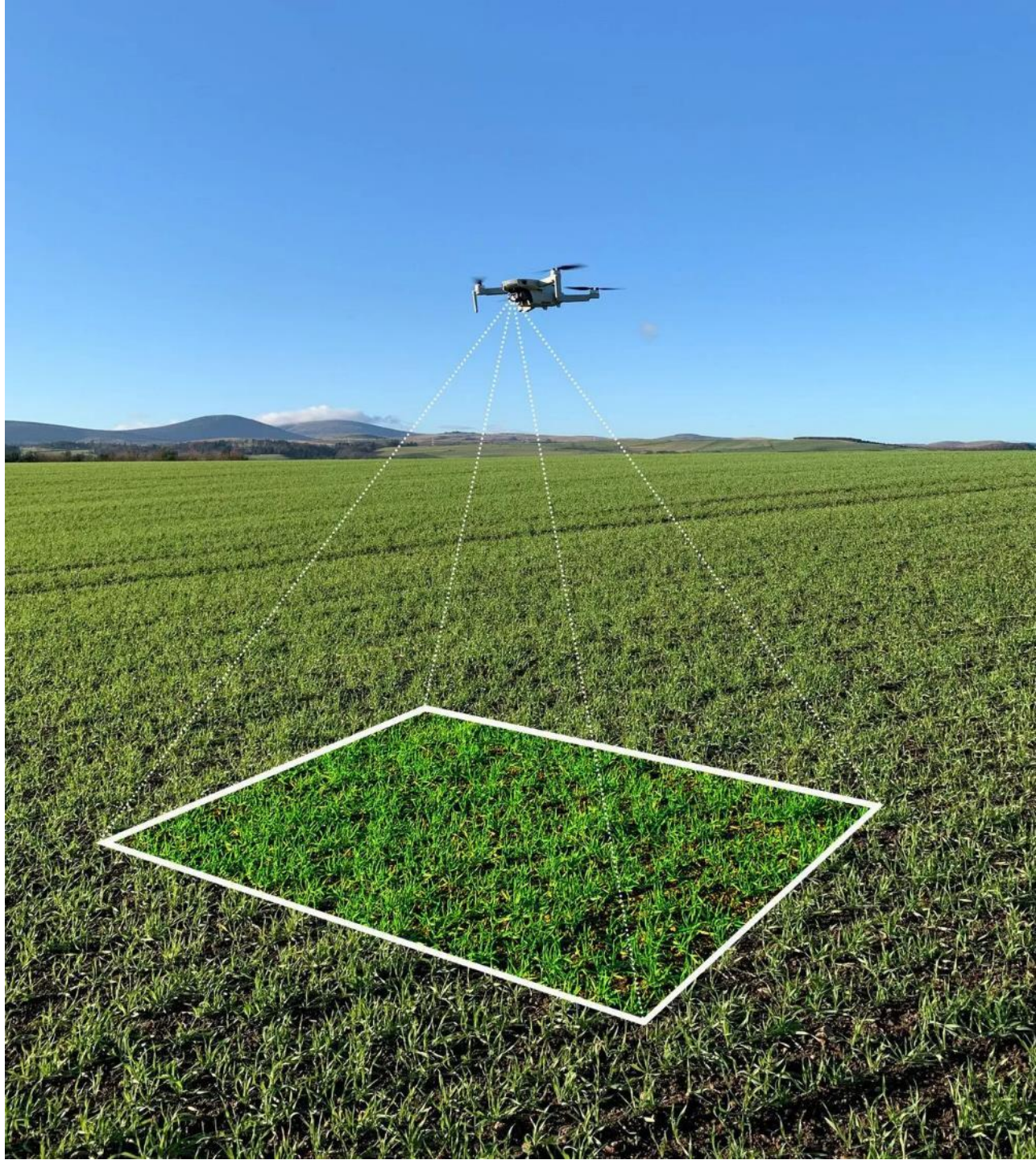
Agri-tech tools
PRECISION FARMING

USE INPUTS ONLY WHERE THEY ARE NEEDED

SOIL AND CROP SENSORS.

STELLITE IMAGERY AND DRONES.

VARIABLE-RATE APPLICATION.



Agri-tech tools
Smart irrigation

WATER EFFICIENCY UNDER CLIMATE STRESS

SOIL MOISTURE SENSORS

AUTOMATED IRRIGATION

WEATHER-BASED DECISION TOOLS

Agri-tech tools
AI FOR PEST MANAGEMENT

DETECT EARLIER, TREAT LESS

EARLY WARNING SYSTEMS

PREDICTION MODELS

POTENTIAL FOR PESTICIDE REDUCTION

Agri-tech tools
ROBOTICS

LABOUR EFFICIENCY AND PRECISION

TARGETED INTERVENTIONS

POTENTIAL REDUCTION OF INPUTS

APPLICATIONS UNDER DEVELOPMENT

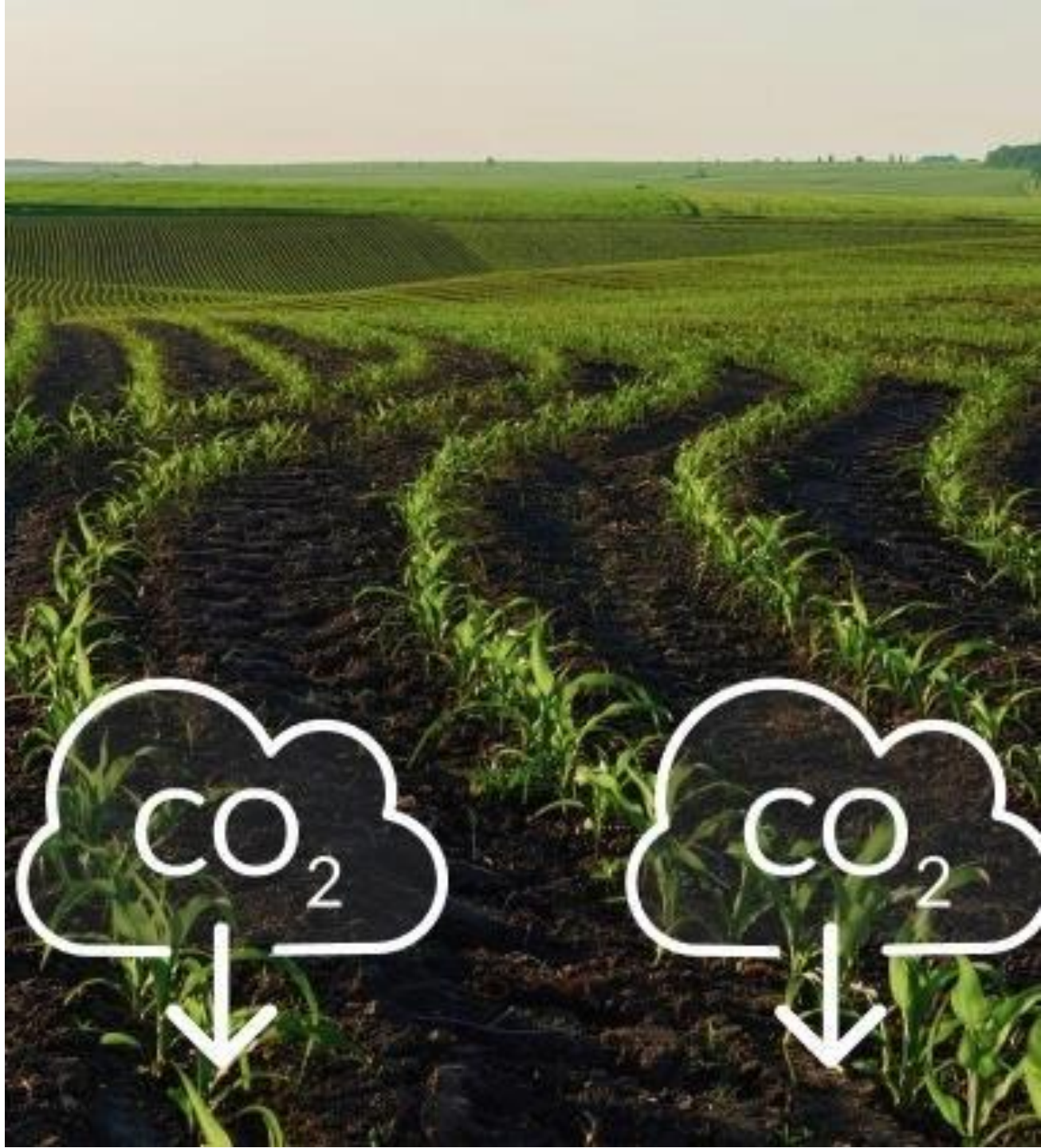
Agri-tech tools
CARBON AND SOIL MONITORING

TOOLS TO MEASURE REGENERATION

SOIL CARBON MRV SYSTEMS

DATA PLATFORMS FOR REGERATIVE PRACTICES

SUPPORTS CARBON FARMING SCHEMES



Agri-tech tools
DIGITAL BUSINESS TOOLS

FOR TRACEABILITY, PLANNING AND MARKET ACCESS

FARM MANAGEMENT SOFTWARE

ESG REPORTING TOOLS

TRACEABILITY PLATFORMS

Ecological TOOLS

ECOLOGICAL INTELLIGENCE IS ALSO INNOVATION

- Habitat restoration.
- Functional biodiversity management.
- Soil health strategies.
- Green infrastructures.
- Biodiversity certification.

Ecological tools
HABITAT RESTORATION

SMALL INTERVENTIONS, BIG CHANGES

<1% OF FARM AREA RESTORED

+7% RICHNESS, +18% ABUNDANCE

IMPROVED ECOSYSTEM FUNCTIONS

Ecological tools
FUNCTIONAL BIODIVERSITY

NATURE AS A SERVICE PROVIDER

NATURAL PEST CONTROL

POLLINATION

MICROCLIMATE EFFECTS

SOIL FAUNA

Ecological tools
SOIL-FOCUSED MANAGEMENT

HEALTHY SOIL, COMPETITIVE FARM

ORGANIC MATER

HERBACEOUS COVER

REDUCED TILLAGE

BETTER INFILTRATION AND STRUCTURE

Ecological tools

MAKING SUSTAINABILITY VISIBLE

TURNING ECOLOGICAL IMPACT INTO MARKET VALUE

CERTIFICATION

TRANSPARENCY TOOLS

TRACEABILITY AND STORYTELLING

Lessons from OLIVARES VIVOS

WHAT WE HAVE LEARNED

1. Small changes, big returns
2. Credibility needs monitoring
3. Value comes from visibility
4. Adoption needs advisory
5. Scaling needs flexibility and policy support

Integrating BOTH WORLDS

DATA + ECOLOGY = SUTAINABLE COMPETITIVENESS

Tech gives

PRECISION

BOTH ARE NEEDED

Ecology gives

RESILIENCE

THANK YOU!