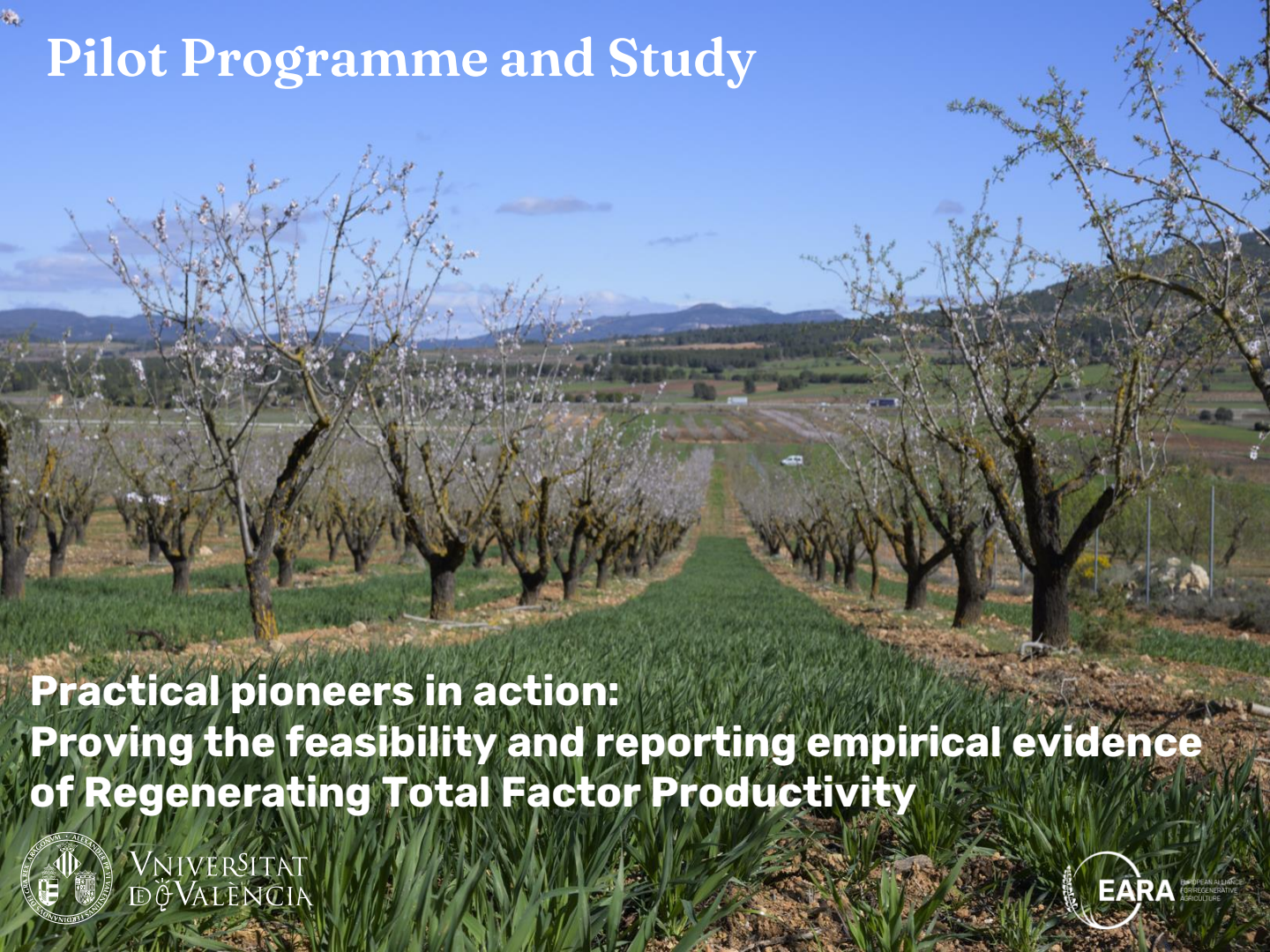
Pilot Programme and Study

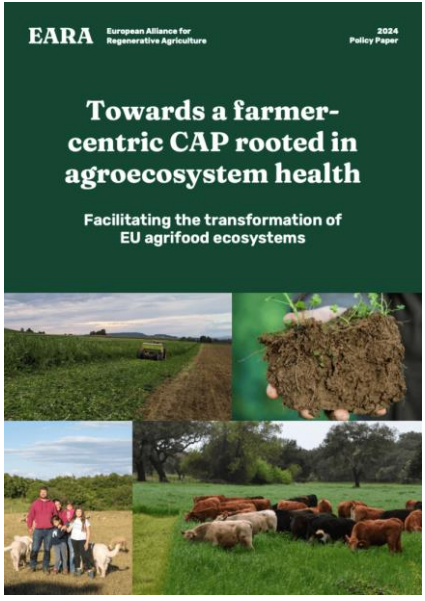


Practical pioneers in action:
Proving the feasibility and reporting empirical evidence of Regenerating Total Factor Productivity

VNIVERSITAT DE VALÈNCIA

EARA EUROPEAN ALLIANCE FOR REGENERATIVE AGRICULTURE

The European Alliance for Regenerative Agriculture (EARA) is an independent, farmer-led coordination, advocacy and action organisation of the movement of regenerative agriculture at the European level.



Based in EARA's Polciy paper "Towards a farmer-centric CAP rooted in Agroecosystem Health - Facilitating the Transformation of EU Agrifood Ecosystems", this study:

- Puts Regenerative Farmers in the centre of the process.
- Supports an innovative approach to CAP transformation.
- Gives evidence on the power of "Farmer-led Regenerating Productivity (RP)".

Pilot Programme and Study

MAIN GOALS:

a) Validating that we can produce more (food, biomass, ESS, gross margin) with less (non farm inputs) = Regenerating Total Factor Productivity (RTFP)

b) Proofing simple and robust measurability of RTFP

c) Testing fit for purpose CAP result-based RTFP indicators

d) Enabling public-private coherence

e) Catalyzing farmer capacity building

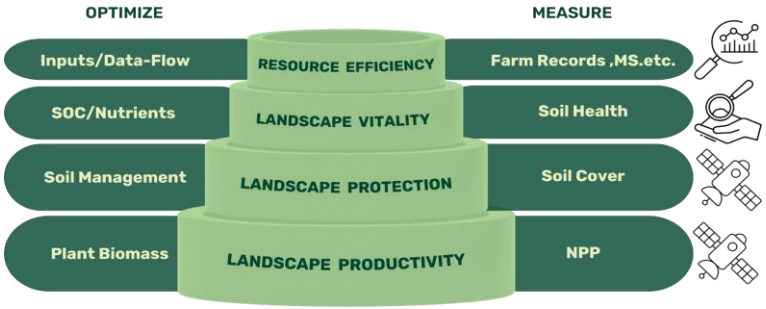
Study Participants and Advisors

Shared Data and Action Infrastructure

Growing practical harmonization of all actors by simple and holistic performance measurement

We have operationalized **Key Performance Indicators (KPIs)** to measure and manage the transition towards regenerating agronomic praxes that provide practical information for farm management, while measuring both economic and ecological performance.

Shared KPIs are central to enable and incentivise broad uptake and support land stewards in their transition with harmonized private and public finance and knowledge support.



= **Regenerating Total Factor Productivity**

designed for coherence with

UNIVERSITÄT BONN · IIASA · S&P Global Market Intelligence · OECD BETTER POLICIES FOR BETTER LIVES · BCG · eurostat

Methodology

Key context-specific indicators that measure and manage the transition towards regenerative agricultural systems.

Remote-sensed indicators

- Whole year photosynthesis
- Whole year soil cover

Optionally:

- Ecosystem structure and phenology
- Whole year plant diversity
- Evapotrasnpiration (ETP)
- Water Use Efficiency (WUE)

Farmer reported or automatically retrieved indicators from tax records (per hectare or unit of stocked or sold output)

- Yields of plants and animals (with MJ, N,P,K content)
- Fuel (l)
- Energy (Mw)
- Water (m3)
- Nutrients (kg NPK, Mineral and organic fertilizers purchased or sold)
- Crop protection (€ or g/l active substance)
- Animal load (GME/ha)

Pilot Programme and Study : Finland

Juuso Jona

COUNTRY
Finland

CROP
Oats

YEAR
2022

SYSTEMS
Organic
Agroecology
Conservation
Agriculture

Contextualized comparison of inputs an outputs per hectare	PIONEER	AVERAGE	%
SOIL MANAGEMENT	Minimum Tillage Drilling	Ploughing	
SERVICE CROP	Undersown Cover Crops	None	
INPUTS			
Nitrogen	42 kg org.	100 kg	-58%
Phosphor	4 kg org.	7 kg	-43%
Kalium	36 kg org.	14 kg	157%
Pesticide	-	Insecticides 0.08 / Fungicides 0.05 / Herbicides 0.25 (g/l active substance	-100%
Fuel	50l	80l	-38%
YIELDS			
Oats	3250 kg	3870 kg	-19%
Aditional Biomass	1000kg		+100%
Gross Margin	975 €	340 €	+187%

LOCATION Finland

CROPS Barley, Oats, Rye, Wheat, Oil Hemp, Oil seed rape, Peas, Fava bean

ORGANIC +36% more than average per UAA

We compare pioneering farms to average farms in a **comparable context*** per **hectare** of **Utilized Agricultural Area from 2021-2023.**

*same pedoclimatic region and land use category

FOOD SECURITY AND LIVELIHOODS

From survey, public and expert data

Kilocalories	Proteins	€/Gross Margin Excluding subsidies and labour	Strategic Autonomy Less fuel, Synthetic N, Mineral P, Non-National Feed
-6%	-7%	+213%	+60%

ECOSYSTEM SERVICES

From survey, public and expert data

Water	CO2e	Biodiversity
Green Water More Evapotranspiration (ET) / Lower Avg Surface Temperature	**Emissions & Removal** Fuel use, NUE, proxied SOC loss and growth	**Pesticide Use & Soil Disturbance**
+6%	+38%	-45%

SUMMARY FINLAND

Barley, Oats, Rye, Wheat, Hemp Oil, Seed Rape Oil , Peas, Fava bean

Regenerating Total Factor Productivity (RTFP) per UAA

+43%

All indicators of the preceding slide summarized by weighted contribution

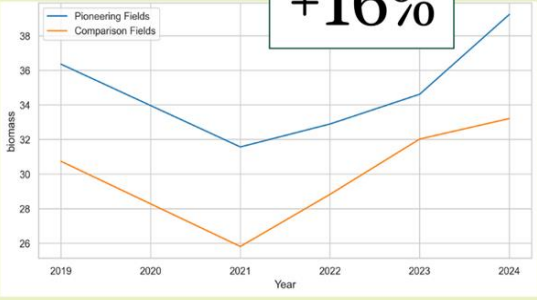
Fit for purpose CAP result-based indicators

+14,5%

On average in this context pioneering farmers had more NPP & Soil Cover by

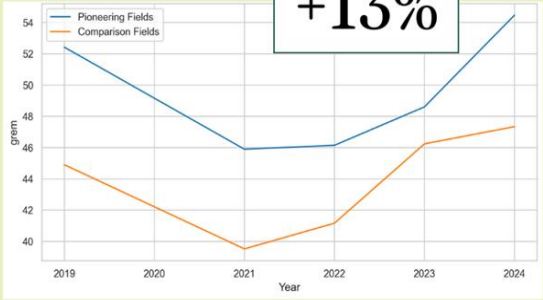
WHOLE-YEAR PHOTOSYNTHESIS PERFORMANCE

+16%



WHOLE-YEAR SOIL COVER PERFORMANCE

+13%



PRELIMINARY SUMMARY EUROPE

Regenerating Total Factor Productivity (RTFP) per UAA

All indicators of the preceding slide summarized by weighted contribution

+38%

Fit for purpose CAP result-based indicators

On average in this context pioneering farmers had more NPP & Soil Cover by

+16%