



Policy Recommendation Plan in Carbon Farming

Published 30/09/2025

Written by the CarboFarmHub team



Co-funded by
the European Union



2023-1-EL02-KA220-YOU-000158211

Policy Recommendation Plan in Carbon Farming
(Framework)

The core study team:

New Agriculture - New Generation (GR)

Theophrastus Research Institute (GR)

Academy of Entrepreneurship (GR)

Centoform (IT)

Ecovalia (ES)

Agrobio (PT)



Co-funded by
the European Union

This document reflects the views of the author(s) and does not necessarily reflect the views or policy of the European Commission. Whilst efforts have been made to ensure the accuracy and completeness of this document, the European Commission shall not be liable for any errors or omissions, however caused.

Table of contents

Table of contents

1. Introduction	3
2. Methodology	4
A. Overview of Carbon Farming and EU Green Strategies.....	5
A1. Carbon Farming in the EU: Current Policies and Practices	5
A2. Scope	6
A3. EU Strategies Supporting the Green Transition in Agriculture	7
B. Policy Recommendations for Supporting Carbon Farming.....	13
B1. Target groups	13
B2. Suggested activities	14
B3. Impact.....	16
B4. Importance of action	17
B5. Feedback of relevant stakeholders	18
C. Selected Literature.....	21

1. Introduction

In 2023, NEW AGRICULTURE - NEW GENERATION from Greece as leading partner, the ACADEMY OF ENTREPRENEURSHIP and THEOPHRASTUS RESEARCH INSTITUTE from Greece, CENTOFORM from Italy, ECOVALIA from Spain and AGROBIO from Portugal started to implement a European Erasmus+ program funded by Erasmus+, EU. The CarboFarmHub (full title: Carbon Farming Awareness Hub) is a project aiming to create a network of carbon farming (CF) awareness hubs located in the 4 partner countries (GR, IT, ES, PT), to answer to the common and crucial needs of increasing awareness and upskilling of young citizens and farmers to be ready to face the new challenges and exploit modern socio-economic opportunities for sustainable societies.

The main objectives and tangible results of CarboFarmHub are:

- Increase awareness of youth and relevant stakeholders in relation to the European strategies concerning the green transition and climate action. A wide set of outreach initiatives both onsite and online will be implemented in all partner countries and at international level, under the framework of the created CarboFarmHub. The Hub will work as a point of reference and accelerator in the promotion of sustainable ways of producing and new sustainable business models to support the green transition at European level.
- Valorize the role of the primary sector, specifically farming in reducing environmental and social impacts. Thanks to the development and piloting of the Hub, an expected number of 600 young people, of at least 350 stakeholders (public administrators, policy makers, farmers, Business Support Organization (BSOs), youth associations, Vocational Education and Training (VET) providers, universities, citizens), will be involved in the so-called Global Framework of initiatives, along with at least 100 farmers interested in conversion processes and in the emerging European carbon market.
- The analysis of the current EU climate policy related to carbon farming, carbon farming costs and barriers, carbon farming payment types will be included in the policy brief (WP3) that will be produced. It will collect comments, ideas, feedback from young and stakeholders after their participation in the awareness raising initiative that can support policy makers in the design of new policies and the development of measures boosting organic and carbon farming.

The expected results of the project are:

1. 1 Global Framework initiative designated and at least 7 initiatives launched
2. 1 EU Digital CarboFarmHub designed and involved at least 600 young people, 350 stakeholders, out of which young 100 farmers, involved
3. At least 30 MoUs signed with organisations outside of the consortium with least 18 networks or stakeholders directly involved into the dissemination of the project
5. 3000 unique visitors reached through the project website and 600 subscribers to project's social media

6. 1 policy brief produced and distributed to at least 50 different stakeholders.

The Scope of this Policy Recommendation Paper is to promote low-carbon agriculture by enhancing knowledge, skills, and collaboration among young people, farmers, and policymakers. It seeks to empower young entrepreneurs in the agricultural sector, support farmers transitioning to sustainable practices, and foster broader understanding and acceptance of carbon farming. Through educational, collaborative, and awareness-raising actions, the project aspires to build a resilient agricultural innovation ecosystem with positive environmental and local development outcomes.

2. Methodology

This document is the result of an active method of involving different stakeholders in a co-creative process. During the project, we engaged hundreds of young people, farmers, and stakeholders through seminars, workshops, field visits, and online campaigns. At the same time, we documented best practices already implemented in the Mediterranean and mapped out barriers and opportunities for scaling up carbon farming practices in the agricultural sector. During various meetings at international and local level, webinars, workshops, round tables and other tested initiatives the stakeholders shared their experiences under the guidance of the whole Carbon farming team.

In the end, the Carbon farming team collected suggestions, observations, and considerations for the implementation of this Policy Recommendation Brief, which aims to increase awareness of the importance of carbon farming.

The document is divided into two parts:

The first part of the policy brief outlines the main EU strategies driving the green transition in agriculture, such as the Green Deal, Farm to Fork, the CRCF Regulation for carbon removal certification, and the Vision for Agriculture and Food 2040 roadmap. It also reviews the current policy landscape in Greece, Italy, Spain, and Portugal, identifying regulatory gaps and opportunities. This section provides insights into the policy context in which carbon farming initiatives can grow. The goal is to highlight the foundation for developing national and regional actions.

The second part presents completed and ongoing carbon farming projects across Europe, with emphasis on those in consortium countries, highlighting good practices and innovative approaches. It also suggests actions to support youth entrepreneurship, farmer training, public outreach, and stakeholder collaboration. The initiatives have already shown strong engagement and willingness among participants to adopt sustainable farming practices. Continuous feedback has been essential in improving tools and increasing public trust in carbon farming.

A. Overview of Carbon Farming and EU Green Strategies

A1. Carbon Farming in the EU: Current Policies and Practices

According to the European Union “Carbon farming” refers to the management of carbon pools, flows and GHG fluxes at farm level, with the purpose of mitigating climate change. This involves the management of both land and livestock, all pools of carbon in soils, materials and vegetation, plus fluxes of carbon dioxide (CO₂) and methane (CH₄), as well as nitrous oxide (N₂O)” (European Commission, n.d.).

There are many farm management ways/activities which can meet the goals of ‘carbon farming’. These include: Afforestation and reforestation projects; targeted conversion of cropland to fallow; setting aside farm area as permanent grassland; use of conservation tillage, catch crops and/or cover crops; improved grazing-land management; reduced inorganic fertilizer application; and agroforestry

Carbon Farming in Greece

At the time of writing this report, no national legislation on Carbon farming (practices) exists in Greece. Nevertheless, there are development at the regional level, such as the establishment of a ‘Carbon Footprint Bureau’ in the region of Eastern Macedonia & Thrace, aiming, among other, to monitor and reduce carbon emissions in the agri-food sector. Farming practices contributing to carbon reductions may be financially supported through eco-schemes, as part of the revised CAP framework. Currently, Greek farmers may apply to any of the existing 31 eco-schemes’ “actions”, grouped under 10 “themes”. Though, only Theme P1-31.4 ‘Circular economy applications in agriculture’ makes explicit reference on ‘mitigating climate change and improving the soil organic material’. Nevertheless, a large number of the Actions pertain to carbon farming practices (e.g. introducing cover plants, promoting agroforestry, monitoring the crops’ carbon footprint, regulating the livestock’s fodder in order to achieve reduced GHGs emissions, etc), while the Theme ‘Continuation of Organic Farming and Husbandry Practices’ is considerably similar to carbon farming practices.

Carbon Farming in Italy

The state of the art of Carbon Farming regulation Framework in Italy is the following:

- Public Registry of Voluntary C Credits from the Agroforestry sector established at CREA- Consiglio per la ricerca in agricoltura e l’analisi dell’economia agraria
- Credits generated by the agroforestry sector at the instance of the relevant landowners and land managers will be expendable within a national voluntary market.
- Credits registered in the Italian Registry will not be expendable on the ETS or on the Global Voluntary Market
- Italian Registry-enrolled credits will complement the future C-Farming scheme by contributing to increasing the value that can be developed by the agroforestry sector

- Currently, schemes are defined for the agroforestry sector while more complex is the definition for the agricultural sector.

Carbon Farming in Spain

Spain does not yet have a national carbon farming scheme in place, but it does operate a voluntary registry for carbon footprint, offsetting and CO₂ absorption projects (Real Decreto 163/2014), managed by MITECO. This registry supports mainly forestry and agroforestry projects, and highlights key principles such as additionality, permanence and traceability. While agricultural soil carbon practices are not yet fully integrated, the registry and related guidance already promote proven carbon removal actions—including reduced tillage, cover cropping, the use of organic amendments, and agroforestry integration.

The recent Real Decreto 503/2024 reinforces institutional capacity by creating a dedicated unit for carbon markets, laying the groundwork for a future, more comprehensive carbon farming framework.

Carbon Farming in Portugal

- Maintenance of vegetation cover in permanent orchards
- Direct sowing
- Cover crops
- Encouraging the improvement of soil fertility by creating grazing and soil fertility management plans for farmers (no-tillage; biodiverse pasture with ≥ 6 species and at least 25% legume cover) - Adding organic matter to the soil.
- Apply organic fertilization using authorized livestock effluents or agricultural biowaste

These practices are all implemented as part of incentives for farmers, through payments. These incentives come from the CAP, which have been adapted to the national context and have resulted in the respective measures mentioned. These incentives are expected to run until at least 2027.

Carbon Farming in European Union

In 2022, building on relevant mentions in the EU's New Circular Economy Action Plan (2020) and the revised Land Use, Land-Use Change and Forestry (LULUCF) Regulation (2021), the European Commission tabled a legislative proposal for a carbon-removal certification scheme.

In late 2024, the Carbon Removals and Carbon Farming (CRCF) Regulation (EU/2024/3012) was published, creating the first EU-wide voluntary framework for certifying carbon removals, carbon farming and carbon storage in products across Europe.

Currently, Member states and private companies are allowed to file certification approvals with the EU, yet by 2028 a Union-wide registry will be operational. At the time of writing, consecutive Experts Group meetings at the EU-level have been debating and deciding the methodologies for measuring and certifying the various CRCF methodologies.

A2. Scope

Even though there are many benefits to carbon farming practices, it is still underrepresented in Europe, due mainly to the novelty of the approach. However, EU' ambitious climate targets and the latest legislative developments affirm that carbon farming will play an integral and important part in the future EU agricultural practices.

The Scope of this Policy Recommendation Paper is to provide the general framework for designing and promoting VET programs related to carbon farming, in order to increase the capacity for public and private stakeholders to align with the aspirations and requirements of the recent Carbon Removals and Carbon Farming (CRCF) EU Regulation.

Accordingly, in this Policy Recommendation Paper we map the existing situation regarding carbon farming in the EU and in the consortium's countries, in terms of the legislative framework and of existing initiatives.

We proceed by providing an overview of the weaknesses as well as the strengths of the current situation, as identified through our projects' activities. Based on those, we propose specific measures on how to provide guidelines and disseminate knowledge and information about carbon farming as well as on how to engage the relevant stakeholders.

Finally, we propose new areas of international collaboration on carbon farming (e.g in new Erasmus+ calls) since a common language can be used to define needs and design efficient training partnership initiatives.

A3. EU Strategies Supporting the Green Transition in Agriculture

The European Union is constantly trying to face the challenge of climate change and environmental degradation through policies, frameworks and strategies. The main EU strategies to support the green transition in the agricultural sector are:

- The European Green Deal – a comprehensive strategy aimed at transforming the EU into a climate-neutral continent by 2050. It covers various sectors, including agriculture, and aims to promote sustainable practices, reduce greenhouse gas emissions, and protect biodiversity.
- The Farm to Fork Strategy - aims to make food systems fair, healthy, and environmentally-friendly. It addresses the entire food supply chain, from production to consumption.
- The Common Agricultural Policy (CAP) Reform - long-standing EU policy that supports farmers and promotes rural development. The recent reforms are designed to align the CAP with the Green Deal objectives.
- The Biodiversity Strategy for 2030 – a strategy that aims to halt biodiversity loss in Europe and help restore natural ecosystems. It includes specific measures to protect and enhance biodiversity in agricultural landscapes.
- The Climate Action Strategy – a strategy that targets to reduce greenhouse gas emissions by at least 55% by 2030, compared to 1990 levels. The agricultural sector plays a crucial role in achieving these targets.
- The Carbon Removals and Carbon Farming (CRCF) Regulation (EU 2024/3012) -a Regulation establishing a Union-wide voluntary certification framework for permanent carbon removals, carbon farming and carbon storage in products, including a set of criteria and rules for verifying and certifying the process. The relevant certification methodologies are to be established by the Commission and by 2028 a Union Registry (including the type of activity, the certification process and so on) will be in place.
- The Vision for Agriculture and Food roadmap – a communication by the European Commission, including amongst its 2040 targets a 'future proof agri-food sector that is functioning within planetary boundaries, where farming and the food sector contribute together to the EU's climate objectives'. To this end, the document acknowledges the importance of carbon farming in meeting

this aim, while proclaiming that once the certification methodologies envisaged in the CRCF Regulation will be fully developed the next step is to find ways of matching offer and demand for the carbon-farming credits.

A4. Carbon Farming in Action: Ongoing and Completed Projects Across the EU

In this section we provide an indicative list of completed and on-going carbon farming projects through the EU, some of which are running also in the Carbon Farming Hub consortium countries (denoted in bold)

SmartSOIL (Sustainable farm Management Aimed at Reducing Threats to SOILs under climate change) was a research project in the European Commission Seventh Framework Programme (2011-2015). It ran in Poland, Hungary, Italy, Spain, Denmark and the UK. Its aim was to contribute to reversing the current degradation trend of European agricultural soils by improving soil carbon management in European arable and mixed farming systems covering intensive to low-input and organic farming systems.

The Interreg North Sea Carbon Farming ran between Sep 2018 and Aug 2021 to promote Carbon Farming in the North Sea Region, by implementing carbon sequestration (CS) techniques on farm-level but also by facilitating collaboration between farmers and interested parties, in- and outside the food chain.

The goal of the LIFE CarbonFarmingScheme project was to identify and accelerate the development and adoption of novel incentives for carbon sequestration and the increase and maintenance of the organic carbon stock in soil and biomass in Europe. It ran between 2020 and 2022.

The Interreg Central Europe Carbon Farming is running between April 2023 and March 2026 to promote Carbon Farming in the Central Europe Region. The countries involved are: Slovenia, Poland, Hungary, Italy, Austria, Croatia, Germany, and Czechia.

The LIFE Carbon Farming project aims to encourage farmers to adopt strategies to reduce their carbon footprint and increase carbon storage in vegetation and soils. It runs in France, Spain, Italy, Ireland, Belgium and Germany.

The project is co-funded by the LIFE Programs of the European Commission Grant Agreement: LIFE20 CCM/FR/001663 (1/10/2021 – 1/10/2027).

The Carbon Farming Projects Inventory is an Inventory of the latest Carbon Farming projects in Europe, compiled by the Institute for European Environmental Policy. The inventory includes predominantly projects funded by the Horizon Europe program, with a small selection of projects financed by other sources of public funding at the EU level, as well as private sector initiatives. Projects have been selected based on their potential to contribute to climate mitigation or resilience, and a low risk of directly undermining other environmental objectives. The inventory also includes projects that do not state climate mitigation as their main aim but are likely to yield climate benefits based on the employed practices. All projects are either ongoing or have been finalized in the last five years.

In Greece:

N° 1 CARBONICA - Carbon initiative for climate-resilient agriculture

Carbonica aims to introduce Carbon Farming practices in the widening countries of Cyprus, Greece, and North Macedonia. A Carbonica Excellence Hub will be established to connect and strengthen the innovation ecosystems of these three countries.

This hub will streamline research and innovation (R&I) efforts to encourage the adoption of Carbon Farming Approaches (CFA) by developing new business models for the agro-food industry that prioritize carbon sequestration. Furthermore, it will unite policymakers and civil society to foster collaboration, contributing significantly to the reduction of the region's carbon footprint.

CARBONICA is funded under Horizon Europe. Call, HORIZON-WIDERA-2022-ACCESS-04. GA No. 101087233. Duration, 2023-2026

N° 2 LILAS4SOILS

The LILAS4SOILS project focuses on implementing Carbon Farming Practices (CFPs) to promote climate adaptation and mitigation.

Over five years, LILAS4SOILS will develop five Living Labs (LLs) across six countries- including Greece-, involving 24 expert partners, more than 80 farmers and 125 stakeholders. The project will test CFPs on 85-100 demosites in diverse farming systems and pedoclimatic zones, focusing on: 1) peatland management, 2) agroforestry, 3) maintaining and enhancing soil organic carbon (SOC), 4) livestock and manure management, and 5) nutrient, pesticides and fertilizers management.

The LILAS4SOILS is funded by the European Union (Grant no. 101157414), HEU Mission Soils.

N° 3 OLIVE CLIMA

The OLIVECLIMA project focuses on developing agricultural practices that support climate change adaptation and mitigation in olive cultivation. Over five years, OLIVECLIMA will establish Living Labs across Mediterranean countries, engaging research institutions, farmers and stakeholders. The project will test practices in 60–80 pilot sites across diverse pedoclimatic conditions, focusing on: 1) identifying practices that enhance the absorption of atmospheric CO₂ by olive trees, 2) reversing soil organic matter decline, erosion and desertification through measures that increase soil organic matter, 3) reducing greenhouse gas emissions and other environmental impacts from crop production, 4) providing methods to strengthen biodiversity, and 5) developing environmental indicators and life cycle models to monitor and calculate the carbon balance in olive groves.

The OLIVE CLIMA is co-funded by 50% by the financial instrument of the European Union's Life + .

In Italy:

N° 1 AGRIENERCARBON

Agrienercarbon aims to identify a standard for certified calculation of soil carbon storage using a simplified methodology. The fields where testing and sampling will be carried out are from CIB member farms that apply the BiogASFattobene® model and use digestate extensively as an organic fertilizer.

Agrienercarbon is a project funded by the RDP Lombardy Region 2014-2020 MEASURE 16 – “COOPERATION” SUBSECTION 16.1 – “Support for the establishment and management of EIP Operational Groups on agricultural productivity and sustainability”, OPERATION 16.1.01 – “EIP Operational Groups”, and it runs between Year A- Year B.

The main objectives of the Agrienercarbon project are the following:

- To define criteria for evaluating the accumulation of organic matter in soils
- to develop an innovative simplified method for quantifying the evolutionary trend of soil organic carbon content
- to develop and validate a simplified system to quantify carbon storage in soils
- to estimate the carbon balance
- defining, according to the European guidelines on "carbon farming," the set of data, information and records

N° 2 LIFE C-FARMS project focus was linked to enabling Carbon Farming practises through an improved knowledge system supporting the development of a regulatory framework for certification of carbon removals based on a transparent and scientifically sturdy Carbon accounting scheme in connection with the national GHG inventory.

The project supported the design and implementation of targeted payments for the application of Carbon Farming practices through the development of a regulatory framework for a carbon certification system in collaboration with relevant actors and institutions. It was funded by the 2020 LIFE Programme of the European Commission under code “LIFE20 PRE IT/017and ran between December 2021 – December 2023

N° 3 Life VITICASE - CARBON FARMING IN VITICULTURE

LIFE VitiCaSe, a project with unique characteristics in Europe and at the forefront worldwide dedicated to Carbon Farming in viticulture, characterised by a series of agricultural and soil management practices aimed at increasing the capacity of the wine-growing ecosystem to capture and retain atmospheric carbon, is now underway.

The core project activities are the following:

- Creation of a database on agronomic practices
- Creation of a credible and certifiable carbon stock estimation computer tool
- System validation by field analysis
- Implementation of the system in 4 pilot vineyards of 3 farms (Castello di Albola, Tenute Ruffino and Società Agricola San Felice)
- Certification of Carbon Credits through the support of Carbon Credits Consulting, their notarization via blockchain and placement on exchange platforms
- Monitoring of technical and economic results
- System transfer and replication

Through these activities, the project aims at contributing to climate change mitigation and design of a replicable approach to carbon farming in the sector. The LIFE VitiCaSe Project has received funding from

the European Union's Life Program. Project 101113620 - LIFE22-CCA-IT-LIFE VitiCaSe - "Viticulture for Soil Organic Carbon Sequestration" and runs between September 2023 - August 2027

N° 4 NOVASOIL - Innovative business models for soil health

The general objective of the NOVASOIL project is to highlight the benefits for the society and the environment from the investment in soil health. The main expected outcome of the project is a toolbox for the analysis of suitability of different business cases that promote soil health. This toolbox will be based on a set of good examples from Europe and other countries and the needs and demands from the society. The toolbox will include a categorisation of the models and business cases taking into account: a) sustainable soil management under different land uses and climatic conditions; b) products based on practices promoting soil health; c) consumption and certification practices conducive; d) the reuse of land and e) sustainable soil management in the context of the EU Taxonomy Regulation. The first milestone of the action is to develop a conceptual framework of soil health and business. This framework will nurture other WPs in order to develop in the same way all the expected objectives. The soil health business models will analyse current successful experiences in Europe and outside Europe in order to categorise them taking into account their variability. In addition, NOVASOIL includes 13 Case Studies with business models that promote soil quality and products based on sustainable crop and soil management.

An analysis of current policies is carried out in order to provide suggestions and improvements that facilitate the implementation of these soil health businesses.

Other countries involved: Spain, Latvia, Germany, Bulgaria, France, UK, Estonia. It was funded by the European Union.

In Spain:

N° 1 ORGANIC CLIMATE NET – Building a European Network of Organic Climate Farms

The OrganicClimateNET project aims to establish a pilot network of 250 organic farms in 12 EU countries to test, refine, and disseminate sustainable agricultural practices that support climate resilience and carbon sequestration. In Spain, several demonstration farms are involved, showcasing regionally adapted strategies for carbon farming within the framework of certified organic production. The network will promote peer-to-peer learning, offer tailored training, and provide policymakers with real-life data on the environmental impact of agroecological practices. The project is co-funded by the Horizon Europe research and innovation programme under Grant Agreement No. 101136880 and runs from February 2024 to January 2028 and the Swiss State Secretariat for Education, Research and Innovation (SERI).

N° 2 LIFE CARBON FARMING – Creating Incentives for Climate-Friendly Agriculture

The LIFE Carbon Farming project supports the implementation of carbon farming practices through incentive schemes and participatory tools. In Spain, the project works closely with regional stakeholders to identify the most effective approaches for carbon footprint reduction and soil carbon sequestration. It provides training for farmers, develops MRV (monitoring, reporting, verification) protocols, and explores voluntary carbon credit certification options. The project fosters dialogue between farmers, advisors, and public institutions to create a framework for long-term adoption of low-carbon agriculture. It is co-funded by the European Union's LIFE Programme under Grant Agreement LIFE20 CCM/FR/001663 and runs from October 2021 to October 2027.

N° 3 OLIVE CARBON BALANCE – Measuring and Managing the Carbon Footprint of Olive Oil

Developed by ECOVALIA, the Olive_Carbon_Balance project focuses on calculating and optimizing the carbon footprint of different olive oil production systems in Spain. Using satellite data, field

measurements, and carbon accounting tools, the project identifies best practices for soil carbon enhancement and climate mitigation in the olive sector. It also integrates blockchain-based certification mechanisms for carbon credits, aiming to link carbon sequestration results with economic benefits. The project is aligned with the national strategy for sustainable and climate-resilient agriculture and provides technical evidence for both farmers and policy planners.

The project is co-financed by the European Agricultural Fund for Rural Development (EAFRD) (80%) and the Spanish Ministry of Agriculture, Fisheries and Food (MAPA) (20%), and runs from 2024 to 2026.

N° 4 OLEO MITIGA – Valorising Carbon Markets in Traditional Olive Groves

The OLEO MITIGA project promotes the adoption of climate mitigation strategies in traditional Andalusian olive groves through sustainable soil management and access to voluntary carbon markets. Coordinated by Ambienta Ingeniería, in partnership with the University of Córdoba, local cooperatives, and farmer associations, the project tests a set of regenerative practices—including reduced tillage, cover crops, pruning residue incorporation, and rotational grazing—aimed at increasing soil organic carbon. Using satellite data and in-situ measurements, the project develops tailored carbon sequestration models and explores certification pathways for carbon credits. OLEO MITIGA also focuses on farmer engagement through on-site training, participatory workshops, and knowledge dissemination. Cofunded by the EAFRD and the Junta de Andalucía, the project runs from 2023 to 2025 and contributes to positioning the olive sector as a key player in Spain’s climate resilience strategy.

In Portugal:

N° 1 ORGANIC CLIMATE NET – Building a European Network of Organic Climate Farms

The OrganicClimateNET project, is creating a pilot network of 250 organic farms in 13 European Union countries, including Portugal. The aim is to test, improve and disseminate sustainable farming practices that promote carbon sequestration and resilience to climate change, while protecting biodiversity, soil, water and air quality.

In Portugal, two lighthouse farms are taking part - one in the North and the other in the South - which act as a reference for farmers in the region, and where carbon sequestration practices will be tested, accompanied by farmers from the respective regions, totalling around 20 producers involved. The project promotes peer learning, the exchange of knowledge between farmers and countries, and supports the development of specific climate policies for the sector, through the participation of IFOAM Organics Europe. OrganicClimateNET is coordinated by FiBL Europe, is cofunded by the Horizon Europe programme, and runs from February 2024 to January 2028,

N° 2 Climate Neutral Farms - ClieNFarms

The Climate Neutral Farms - ClieNFarms project (promotes the transition to sustainable, resilient and carbon-neutral farms, in line with the European Green Deal.

Through 20 case studies in different regions and production systems (crops, livestock and dairy), the project tests innovative solutions co-designed with farmers in a participatory living lab model. The practices are evaluated using advanced modelling and multi-criteria analysis tools, and the data is organised on a collaborative digital platform. ClieNFarms involves farmers, companies, researchers, policymakers and citizens to develop economically viable agricultural models with a positive environmental impact, contributing to the climate neutrality of European agriculture by 2050. It is cofunded by the European Union's Horizon 2020 programme, and runs between 2022 and 2026

N° 3 SoilValues

SoilValues project aims to improve soil health through value-based business models, highlighting the essential role of soil in carbon sequestration to mitigate climate change.

The project develops an evaluation framework for the factors that influence investment in soil health and tests solutions in six 'living labs' in Europe. To do this, it brings together twelve communities of practice with managers, investors and authorities to promote knowledge and collaboration.

SoilValues also creates a toolbox with incentives and policy recommendations to support sustainable practices and increase the value of soil ecosystem services, making it a strategic asset for environmental and climate sustainability. SoilValues project is funded by the European Union's Horizon 2020 programme. It began in 2023 and will run until 2027.

N° 4 Sustainolive - Organic olive oil: implementing innovative strategies for sustainable production, valorisation and consumption

The Sustainolive project promotes the valorisation of Portuguese organic olive oil through sustainable solutions throughout the value chain, from the olive grove to the consumer.

Focussed on innovation and sustainability, the project introduces agricultural practices for carbon sequestration, extraction systems with lower water and energy consumption, and ecological packaging with a smaller environmental footprint. It is also committed to promoting organic olive oil in premium international markets.

It includes analysing the life cycle of production on different types of farm, making it possible to compare and demonstrate the environmental benefits of the practices adopted. Sustainolive contributes to reducing carbon emissions and strengthening the sector's competitiveness in a context of climate transition. This is a nationwide project, co-funded by the Recovery and Resilience Facility, which runs from 2023 to 2025 and involves 16 national partners

B. Policy Recommendations for Supporting Carbon Farming

B1. Target groups

The most relevant target groups for involvement in Carbon farming activities were identified as:

1. Young people who are interested in sustainable agriculture and new business models tied up to the evolution of the primary sector, and especially in the emerging carbon market, are willing to become entrepreneurs in the sector. It includes skilled young people who have studied agriculture and wish to acquire new knowledge or reskill themselves as well as young people who have non-formal competencies, non-academic studies and more practical capabilities in agriculture, who will upskill themselves.
2. Farmers wishing to convert their transitional farms into organic or to implement practices that reduce greenhouse emissions or increase the soil carbon sequestration, those who think that leaving

conventional and very impacting production systems behind is important to securing the future of their farm, respecting the environment for a better quality of life and a better world for everyone.

3. School systems, such as secondary technical institutes.

Other targets for the creation of sustainable multi-stakeholder networks are:

1. Experienced farmers who wish to share their expertise with young aspirants to up-skill them and cooperate with them. They will have a highly skilled colleague with whom they can work together for the joint development of their businesses, by exploiting emerging opportunities together.
2. Relevant stakeholders – local, regional and international stakeholders, associated partners, private stakeholders (companies, BSOs, NGOs, Youth organizations) and public ones (Municipalities, local/regional public authorities in charge of community and territorial development). In this case their involvement will be achieved through targeted communication and dissemination actions (disseminating events, digital communication strategy).
3. Policymakers at a local and regional level, focusing on involving young, elected members of local municipalities and regional councils who might adopt and promote carbon farming.

B2. Suggested activities

Suggested activities

1. Capacity-Building for Young Entrepreneurs in Carbon Farming
 - Entrepreneurship Training Programs: Develop tailored training sessions for young people interested in starting businesses in sustainable agriculture and the carbon market. These programs should include modules on business planning, carbon credit mechanisms, and innovative farming practices.
 - Mentorship Networks: Connect young entrepreneurs with experienced farmers willing to share their expertise. These partnerships can facilitate the exchange of knowledge, joint ventures, and collaborative growth.
 - Reskilling and Upskilling Opportunities: Provide both academic and non-academic pathways for young individuals to enhance their practical and theoretical knowledge, ensuring accessibility for those with formal education as well as those with hands-on experience in agriculture.
2. Support for Farmers Transitioning to Sustainable Practices
 - Conversion Assistance Workshops: Offer workshops for farmers who wish to convert their conventional farms to organic or implement greenhouse gas-reducing practices. These sessions can provide guidance on the transition process, including financial planning and soil management.

- **Demonstration Farms:** Establish pilot farms that showcase successful transitions to sustainable practices, serving as real-world examples for farmers to observe and learn from.
- **Peer Learning Circles:** Create groups, from regional to district level, where transitioning farmers can interact with others undergoing similar changes, sharing experiences and solutions to common challenges.
- **Establish 'all-in-one' information points:** Systematize existing scientific knowledge, legal requirements, financial opportunities and best-examples into a single information reference point, and present this information in an easily-accessible and user-friendly format.

3. Engagement with Schools and Educational Institutions

- **Carbon Farming Curricula:** Collaborate with secondary technical institutes to integrate carbon farming into their curricula, emphasizing its environmental and economic importance.
- **Field Trips and Practical Learning:** Organize visits to carbon farms for students, giving them hands-on experience and inspiration to consider careers in sustainable agriculture.
- **School Competitions:** Host contests in schools focusing on innovative ideas for carbon farming and climate action to engage younger generations and nurture creativity.

4. Multi-Stakeholder Network Development

- **Knowledge Exchange Forums:** Create platforms for interaction among experienced farmers, young entrepreneurs, and stakeholders to foster collaboration and mutual learning.
- **Collaborative Business Models:** Facilitate joint ventures between farmers and private or public entities to explore innovative solutions in carbon farming and sustainability.
- **Targeted Stakeholder Engagement:** Implement a comprehensive communication strategy to involve local authorities, NGOs, companies, and policymakers in dissemination activities, ensuring widespread awareness and buy-in for carbon farming initiatives.

5. Policy Advocacy and Support

- **Local Policymaker Training:** Organize workshops for local and regional policymakers, particularly young, elected members, to educate them on the benefits and potential of carbon farming.
- **Policy Feedback Mechanisms:** Establish structured channels to collect feedback from stakeholders and farmers, ensuring that policy recommendations reflect ground realities and practical needs.
- **Incentive Program Advocacy:** Promote the creation of subsidies and tax incentives for farmers adopting carbon farming, emphasizing its alignment with broader environmental and economic goals. Explore the possibility of introducing simplified financial instruments (such as simplified cost options and result-based premiums) that enable effective participation of small farms.
- **Relevant policies integration:** Upgrade and make more explicit carbon farming in CAP's eco-schemes framework. Integrate carbon farming into LEADER local development strategies, which provide a participatory governance framework and strong experience in rural innovation.

6. Awareness Campaigns and Community Outreach

- **Public Information:** Host events in local communities to highlight the benefits of carbon farming for the environment, economy, and quality of life. Establish an EU-level label for carbon farming products, giving visibility to producers, generating added value and informing the public/consumers.

- Digital Outreach: Leverage digital tools like webinars, social media campaigns, and the EU Digital CarboFarmHub to reach wider audiences, especially younger demographics.
- Local Success Stories: Share compelling stories of farmers and young entrepreneurs who have successfully transitioned to carbon farming to inspire others and build trust in the model.

B3. Impact

The willingness of stakeholders to promote carbon farming will only be facilitated if they:

- Are actively involved in well-structured projects, strategies, or initiatives that address carbon farming and its relevance to climate action.
- Are convinced of its usefulness in addressing critical environmental and socio-economic challenges, including climate resilience, soil health improvement, and sustainable rural development.
- Recognize the economic viability of carbon farming practices within the framework of carbon credit markets and sustainable agriculture models.
- Have access to credible, data-driven studies that clearly demonstrate the value and effectiveness of carbon farming practices.
- Are familiar (through targeted training, dissemination programs, and the sharing of outcomes from the CarboFarmHub project) with successful, scalable examples of carbon farming already operating in different contexts.

Carbon farming can offer:

- Environmental Services: Practices such as carbon sequestration, improved soil health, and reduced greenhouse gas emissions directly contribute to mitigating climate change and enhancing ecosystem resilience.
- Economic and Social Services: By participating in carbon credit schemes, farmers gain financial incentives while also contributing to the socio-economic development of their communities. Carbon farming can also provide job opportunities, also for young people, and encourage the development of cooperative business models.

In this regard, recognition of carbon farming's environmental role is progressing. However, there is a need to focus on its economic and social benefits to secure broader support from decision-makers.

Carbon farming also holds the potential to compete in emerging sustainability markets (e.g., carbon credits, organic certification) and can contribute to the economic revitalization of disadvantaged rural areas.

As a natural evolution and follow-up of the CarboFarmHub project, the development of a comprehensive vademecum (guidebook) is proposed to convey the real value of carbon farming to public and private decision-makers. This guidebook would include:

- An updated inventory of carbon farming practices collected at the national level, in collaboration with agricultural organizations.
- A compilation of significant carbon farming projects presented by individual farms or farm networks, highlighting successful transitions and financial outcomes.
- A simplified handbook (targeted at farmers) containing:
 - Steps to plan and implement carbon farming practices.

- Guidance on navigating bureaucratic procedures for setting up agreements with public and private entities.
- Strategies for building business networks and participating in carbon credit markets.

These steps could be implemented as a follow-up of the CarboFarmHub project, potentially serving as a platform for regional, national, and European-level cooperation to promote and strengthen carbon farming.

To involve decision-makers and support their future efforts to promote carbon farming, it is proposed to organize a remote workshop (atelier) for participatory planning. This workshop would aim to:

- Identify and classify successful carbon farming practices and methodologies tested in the partner countries.
- Highlight effective pathways for scaling up carbon farming, including models for financial sustainability and maximizing environmental impact.
- Explore and document the relationships between public and private stakeholders working to expand carbon farming initiatives.

In collaboration with CarboFarmHub partners and stakeholders involved in the project's validation meetings, this participatory process could lay the groundwork for a territorial pilot project. Such a project would aim to test and refine at least one type of carbon farming model, based on real-world examples, that aligns with the specific needs and potential of a given region.

B4. Importance of action

While carbon farming is at its incipient phase, it is here to stay. Though carbon farming's prime objective is to contribute to the EU's climate mitigation goals and strategies, its environmental, economic and social sustainability potential is also high.

Regarding carbon farming's environmental co-benefits, by improving soil health and due to a decreased use of chemical fertilizers, CF supports the local biodiversity and contributes to reduced environmental pollution. The high(er) soil quality, coupled with increased water-retention and, thus, less erosion and nutrients' leaching, has positive effects on the crops' productivity -and thus to the farm's economic sustainability.

Relating to its economic benefits, the developing EU CF certification systems will create new jobs' opportunities for agricultural specialists and provide new income opportunities (in the form of e.g. direct subsidies, labelling premiums, carbon credits and/or crops' diversification) for the farming sector.

At the societal level, CF contributes to improved public health (due to reduced pollution and CC mitigation), food security (due to crops' diversification and improved land productivity), to rural communities' development (due to novel income opportunities) as well as to increased employment (due to new specializations & market niches).

Thus, at this juncture, while the EU framework is not yet settled, it is crucially important for the stakeholders to be involved in the deliberations regarding the CF policies -in order to have their concerns and priorities taken into account-, for the farmers to be informed about the CF practices -in order to

prepare themselves for the new challenges and opportunities which lie ahead- and for the agricultural specialists, practitioners and students alike, to be (re-) trained on the relevant monitoring and certifying methodologies -in order to stay in tune with EU agriculture's market needs and developments).

B5. Feedback of relevant stakeholders

Greece

Farmer, 25 years old - Participant in: Open Lecture event 'Getting to know Carbon Farming', November 2024

"Participating in this event has substantially changed my views on carbon farming. Before I was quite sceptical of all this, now I have a better understanding of the scientific basis and the benefits of these practices. I am thinking of giving it a try, yet I see several hurdles on the way. For me, the biggest difficulties [facing a farmer considering to engage in carbon farming] are the lack of information, the costs of transition and the uncertainty about the economic return of new practices. Targeted subsidies and incentives are needed for those adopting sustainable practices! Also, recognising the benefits of carbon farming (e.g. through certification or 'payment for ecosystem services') could work positively.

Technical support and advice are also much needed. For a young farmer, the transition needs support and guidance. Thus, I really enjoyed participating in the event! The face-to-face experience, the contact with experts and being shown what has been going on in other places, act as a mind-changer."

Chairperson of organic Olive Oil producers co-operative, 62 years old - Participant in: Dissemination event 'Prospects and Challenges of Carbon Farming', February 2025

"I think carbon farming is becoming an indispensable aspect of the primary sector's value chain. Every person and every activity -including agriculture- has a moral obligation to contribute to climate change mitigation. Yet, carbon farming has also practical benefits, it has the potential of offering olive producers an additional income source - which is all the more important nowadays, when the future of olive cultivation is ominous. The producers need to realize that carbon farming -as any other environmentally friendly farming practice- offers a comparative advantage, reduces production costs and gives a promotional boost to their products. So how are we going to persuade farmers' on this? I think three things are needed: for the producers to be better informed, to receive trustworthy advising and to be financially subsidized -yet on a results-based system. I also think that an EU-wide labelling scheme for carbon farming products, something that the consumers could easily recognise, would also be a great help".

Farmer, 34 years old - Speaker in webinar #1 "Organic Farming and Carbon Sequestration - Examples and good practices", April 2025

"Participating in the project's initiatives affirmed and deepened my commitment to sustainable agriculture. Carbon farming wasn't something we adopted because it was fashionable—it emerged as a natural response to the urgent need to protect our land. Facing recurring droughts, soil degradation, and unstable yields, we turned to practices that could bring the soil back to life: cover cropping with legumes, mulching with pruned material, avoiding tillage, and maintaining biodiversity through permanent ground

cover. These methods have helped restore the soil's structure, retain moisture, and increase organic matter, while stabilizing production. Still, the journey wasn't without its challenges. The lack of hands-on technical support, access to appropriate equipment, and a reliable network of peers often made implementation feel isolating.

What this project offered, however, was validation—that we're not alone, and that our farm's experience has something to offer to a broader European conversation. It confirmed what we've long believed: that farmers are not just food producers, but stewards of ecosystems.

Through this initiative, I realized even more the need for practical, field-based training and community-driven learning spaces. To support wider adoption, farmers need simple, honest information, fair incentives, and visibility of real-life success stories—not just theory. Young people especially should be engaged through experiential learning, mentoring, and inclusion in networks of innovation and sustainability. The project has encouraged me to continue connecting practice with science, to explore smart farming tools responsibly, and to dream of turning our farm into a hub for learning and regeneration. I truly believe that carbon farming, if supported well, can be a key solution for Greek agriculture—not just for production, but for resilience, balance, and hope.”

Spain

Graphic Designer, 32 years old - Participant in: Roundtable “Q&A with Professionals” Initiative & Dissemination Event “Carbon Farming: Keys to a Sustainable Future”, May 2025

“As a young citizen concerned about climate change but not directly involved in agriculture, participating in the Carbon Farming Hub events helped me understand how farming can be part of the solution. I was impressed to see how experts and farmers are already working on practical ways to reduce emissions and protect the soil. The roundtable especially opened my eyes to the challenges and opportunities of carbon farming, like the potential use of carbon credits and the importance of clear communication and training for farmers. These discussions showed me that sustainable farming is not just a technical issue—it's also social and political. I believe we need more support from institutions and better public awareness to make this transition possible”.

Quality Technician, 36 years old - Participant in: Questionnaires on Carbon Farming Management Initiative & Dissemination Event “Carbon Farming: Cultivating a sustainable future”, February-April 2025

“In my opinion, carbon farming has a lot of potential to help reduce the carbon footprint in the countryside and mitigate climate change, although it is not that easy to implement. One of the major complications is how to accurately measure how much carbon is being stored in the soil and ensure that these practices really make a difference and are maintained over time.

Added to this is the concern that some companies are using carbon farming solely to offset their emissions, without making any real change.

So I think that for this to really work, we need clearer policies, technology that allows us to measure carbon in the soil more accurately and, above all, joint efforts between governments, companies and farmers to ensure that the benefits are shared fairly and realistically”.

Portugal

Farmer, 33 years old - Participant in: Webinar "Biodiversity and Carbon Farming", February 2025

"Carbon farming it's extremely important because it helps to capture carbon from the atmosphere and store it in the soil. This reduces the gases that cause global warming and improves soil health, helping to protect the environment and combat climate change.

I think one of the main challenges that farmers face in adopting carbon farming and/or organic farming practices is the initial cost and the lack of technical support. Many farmers don't have access to information, training or financial incentives to change their practices. However, there is also resistance to change and difficulties in adapting techniques to local conditions.

The first step to strengthen the transition to carbon farming is improve and create new financial incentives, such as subsidies or payments for environmental services, to compensate farmers who adopt carbon farming practices. It is also necessary to offer technical training, support for certification and access to markets that value sustainable products.

I believe that the awareness in sustainable agriculture can be enhanced through education in schools and universities, with content on organic farming and climate action. It's also important to create projects, competitions and practical training that involve young people in the countryside. Social networks and digital technologies are also useful tools for bringing young people closer to the issue.

After participating in the initiative my outlook has changed in a positive way. After the awareness-raising initiative, I became more aware of the importance of adopting environmentally friendly practices and realized that, even with small gestures, it is possible to contribute to sustainability from my own exploration. If everyone does their bit, however small, together we can transform the planet".

Farmer, 33 years old - Participant in: Dissemination Actions "Organic Farming and Carbon Sequestration", June 2025

"Carbon farming is fundamental in helping farmers adapt to climate change by improving the most efficient and sustainable agricultural systems/practices. Through practices such as crop rotation, minimum tillage, selection of resistant varieties, soil mulching, etc., which are practices that help sequester carbon, reduce the amount of CO₂ in the atmosphere and improve soil fertility.

In my opinion, farmers face several challenges when opting for carbon farming practices, such as the costs of implementing these practices, as they require investments in equipment, infrastructure, etc., sometimes requiring funding, which can be an obstacle. Perhaps one of the biggest obstacles is the lack of knowledge and ageing of farmers and their failure to adapt/accept certain agricultural practices. However, once the carbon market is 'up and running' and it is possible to sell the carbon credits generated, and there is a financial return, farmers will begin to see farming as a benefit for themselves, the climate and the environment.

I believe that for there to really be a transition to carbon farming, there must be adequate incentives to overcome the challenges and promote these more 'environmentally friendly' practices. Through a voluntary market for the sale of carbon credits, which would be easier for farmers in general to access and understand. Creating methods for measuring and evaluating carbon farming practices, through clear policies and regulations. Creating support for farmers who adopt carbon farming practices, as well as creating an advisory service/training program on carbon sequestration farming practices, establishing minimum prices for the products generated in this way.

One of the fundamental points for guaranteeing a more sustainable future is the awareness and participation of the younger generations. It should start in schools, as was done with learning how to recycle, through the inclusion of topics in school curricula; talks and practical activities in school communities such as the creation of sustainable gardens; monetarily incentivizing young farmers who promote carbon sequestration agricultural practices and facilitating their access to training; involving communities locally by providing places for young people and other farmers to share, for example through community gardens. Creating support for farmers who adopt carbon farming practices, as well as creating an advisory service/training program on carbon sequestration farming practices, establishing minimum prices for the products generated in this way.

Climate-friendly practices are key to ensuring a more sustainable and resilient future. We plan to invest in renewable energy sources, particularly solar energy; continue to promote biodiversity by feeding wildlife and continuing to promote the habitat of the Iberian lynx; continue to rotate crops in order to improve the soil; use minimum tillage and soil cover techniques”.

C. Selected Literature

Block, J. B., Michels, M., Mußhoff, O., & Hermann, D. (2024). How to reduce the carbon footprint of the agricultural sector? Factors influencing farmers’ decision to participate in carbon sequestration programs. *Journal of Environmental Management*, 359, 121019. <https://doi.org/10.1016/j.jenvman.2024.121019>

Bumbiere, K., Diaz Sanchez, F. A., Pubule, J., & Blumberga, D. (2022). Development and Assessment of Carbon Farming Solutions. *Environmental and Climate Technologies*, 26(1), 898–916. <https://doi.org/10.2478/rtuect-2022-0068>

Mattila, T. J., Hagelberg, E., Söderlund, S., & Joona, J. (2022). How farmers approach soil carbon sequestration? Lessons learned from 105 carbon-farming plans. *Soil and Tillage Research*, 215, 105204. <https://doi.org/10.1016/j.still.2021.105204>

Paul, C., Bartkowski, B., Dönmez, C., Don, A., Mayer, S., Steffens, M., Weigl, S., Wiesmeier, M., Wolf, A., & Helming, K. (2023). Carbon farming: Are soil carbon certificates a suitable tool for climate change mitigation? *Journal of Environmental Management*, 330, 117142. <https://doi.org/10.1016/j.jenvman.2022.117142>

Sharma, M., Kaushal, R., Kaushik, P., & Ramakrishna, S. (2021). Carbon Farming: Prospects and Challenges. *Sustainability*, 13(19), Article 19. <https://doi.org/10.3390/su131911122>

Tariq, S., Mubeen, M., Hammad, H. M., Jatoi, W. N., Hussain, S., Farid, H. U., Ali, M., Javeed, H. M. R., Sabagh, A. E., & Fahad, S. (2023). Mitigation of Climate Change Through Carbon Farming. In W. N.

Jatoi, M. Mubeen, M. Z. Hashmi, S. Ali, S. Fahad, & K. Mahmood (Eds.), *Climate Change Impacts on*

Agriculture: Concepts, Issues and Policies for Developing Countries (pp. 381–391). Springer International

Publishing. https://doi.org/10.1007/978-3-031-26692-8_22

Van Hoof, S. (2023). Climate Change Mitigation in Agriculture: Barriers to the Adoption of Carbon Farming Policies in the EU. *Sustainability*, 15(13), Article 13. <https://doi.org/10.3390/su151310452>

Verschuuren, J. (2022). Achieving agricultural greenhouse gas emission reductions in the EU post-2030:

What options do we have? *Review of European, Comparative & International Environmental Law*, 31(2),

246–257. <https://doi.org/10.1111/reel.12448>

<https://www.agrotikianaptixi.gr/parembaseis-sskap-pa/ameses-enischyseis/oikologika-programmata31/>

2023-1-EL02-KA220-YOU-000158211



<https://www.carbonfarmhub.eu/>



Co-funded by
the European Union



ecovalia

