



2021

**AFTER LIFE BEEF CARBON PLAN**





# AFTER LIFE BEEF CARBON PLAN

## ITALY





Table of contents

Aims ..... 3

Main results in Italy..... 3

    Number of farms involved in the Life Beef Carbon ..... 3

    Main results in the Life Beef Carbon ..... 4

    SWOT Project analysis ..... 5

    Our target:

Future actions ..... 7

    Communication..... 7

    Research ..... 7

    Tool development..... 8

Future projects

    LIFE CARBON FARMING (2021 a 2027) €6,5 milioni, 700 farms from 6 countries ..... 8

Conclusions..... 10





## Aims

The LIFE Beef Carbon project ended with the drafting of the NATIONAL CARBON ACTION Plan, whose function is to capitalize on the results of the project in the Italian context. In addition to defining the strategies that beef farms must adopt to combat climate change, the project has made it possible to adapt a standardized calculation system and identify a series of positive effects, not only environmentally, of mitigation techniques on livestock farms.

Once the project was completed, CREA set itself the following objectives to further improve the environmental performance of beef farms:

- Promote a transition to beef production systems, which ensure the social, economic and environmental sustainability of beef farms.
- Continue the work of raising awareness among farmers on the effects of climate change, widening the audience to other associations, in addition to those involved in the LIFE Beef Carbon project, of both meat and dairy farmers and other sectors of the production chain.
- Achieve greater involvement of the public administration in the promotion of these practices, so that these mitigation practices are implemented at national level.
- Promote a carbon certificate exchange scheme between the livestock sector and other economic sectors.

## Main results in Italy

### Number of farms involved in Life Beef Carbon

Italy participated in the project with twenty-three farms. Farmers spontaneously joined this initiative aware of the problem related to climate change. The Italian sample consisted of 21 specialized fattening farms, one suckler cow farm and one full-cycle farm located in two Italian regions: Piedmont and Veneto.





In addition to innovative farms, other farms have joined the project, building a real network of Italian demonstration farms. One hundred were the demonstration beef farms consisting of 82 specialized fattening farms and 18 full-cycle farms, located in the provinces of Turin Cuneo and Asti (Piedmont) and in those of Padua, Venice, Rovigo, Treviso, Verona, Mantua, Vicenza (Veneto).

#### Main results in Life Beef Carbon

As part of the Life Beef Carbon project, the main environmental impact mitigation strategies that can be applied to beef farms have been identified, to develop innovative farming systems that improve the technical, economic, environmental and social sustainability of beef farms. The results led to the definition of the "National Action Plan for the reduction of greenhouse gas emissions in beef cattle farms (BEEF CARBON ACTION PLAN)".

The results obtained with the Life Beef Carbon project have shown that it is possible to reduce greenhouse gas emissions on beef cattle farms by an average of 10% in just three years. This value increases if multiple mitigation strategies are applied. In addition, the project highlighted that improving production performance is the key factor in reducing emission intensity (i.e. the amount of greenhouse gases per kilogram of product). The mitigation strategies linked to an improvement in production efficiency have an economically positive implication. Others, on the other hand, are not economically sustainable for the breeder, because they would lead to a reduction in revenues or an increase in costs. In this second case, the public institution should intervene with appropriate programs to support the income of farmers and promote the dissemination of good practices for the reduction of emissions.

### SWOT project analysis

Table 2. The present SWOT analysis is used in France to study the characteristics of low-carbon farms. We adapted it to understand and reflect the Italian context.

**Table 2. SWOT analysis of low-carbon farms in Italy**

Strengths	Weaknesses
<p>Some mitigation techniques are also economically beneficial.</p> <p>Specialized farms have made significant investments in well-being</p> <p>A calculation system validated and shared with other European countries is available</p> <p>The methodological and applicability work is already done and validated, ready to be promoted to the whole sector and be certified.</p> <p>There is scope for improvement in the reduction of emissions in all the production systems of the different Italian zones and climatology.</p> <p>The objectives of the project are perfectly aligned with the "From Farm to Fork" Strategy.</p>	<p>Decreasing in the number of breeders</p> <p>Sector that has little impact on national strategic choices</p> <p>Lack of scientific basis on the total quantitative impact of some of the mitigation techniques.</p> <p>Difficulty valuing the reduction effort in national emission inventories.</p> <p>Age of farmers.</p> <p>Lack of interest from the sector due to the lack of official recognition and the permanent suspicion of green washing.</p> <p>Sector situation and scarce economic margin.</p> <p>Strategies concerning carbon soil strategies are not economically sustainable</p>
Opportunities	Threats
<p>Appreciation of the great efficiency of the Italian fattening system.</p> <p>Implementation of economic incentives via PAC or carbon credits.</p> <p>Improvement of the sectoral image.</p> <p>Upward improvement potential as more technical knowledge is gained, and more additives are authorized.</p> <p>Assessment of feasible efforts in the upstream and downstream value chain.</p> <p>Involvement of other actors.</p> <p>Recognition of the sector as a solution in the fight against climate change.</p>	<p>Low penetration of advice and difficulty in improving it.</p> <p>Sectoral situation and lack of stability that allows investment in improvement.</p> <p>Only organic and/or extensive production is recognized as low-carbon agriculture.</p> <p>Lack of official recognition of the effort.</p> <p>Difficulty in authorizing food additives.</p> <p>Scarcity of scientific basis in Italian conditions to support mitigation techniques.</p> <p>Little effort to improve carbon sequestration</p>

Source: own elaboration (adapted from Idèle)





Our target: number of farmers knowing the project

An element that has rare-characterized the project was communication, which served to raise awareness among breeders and technicians who assist them, about the problem of climate change and the role played by the livestock sector, and to propose the solutions that can be adopted.

CREA disseminated a lot of information about the project. In particular, thanks to the participation in the project of two of the major beef production associations Unicarve Veneto (Association of beef farms-Veneto) and Asprocarne Piemonte (Organization of Meat Producers-Piedmont) it was possible to reach a large number of breeders through the press releases of the two associations. The associates of Unicarve and Asprocarne represent 40% of the national production of beef concerning subjects aged between 12-24 months (about 400,000 animals slaughtered out of a total of 1,000,000). The communication activity was also accompanied by training, carried out through several sessions in which the different emission reduction techniques were illustrated in detail.

At the same time, through meetings, TV interviews and videos put online, a wider audience was reached, concerning processors and trade workers, public administration, schools and consumers.





## Future actions

### Communication

1. CREA will continue in the coming years the communication actions aimed at the largest number of users in every social sector taking advantage of the launch of the new Life CARBON FARMING project.
2. CREA will act as a dissemination manager in collaboration with other partners with whom it has had or has ongoing collaborative projects. It will continue to disseminate the results of the activities carried out and in progress through national and international conferences, seminars, dissemination meetings at regional and national level, scientific and technical publication, the website, newsletter and videos, also using the communication tools made available to the National Rural Network.

### Research

To improve the environmental performance of Italian agriculture and its animal husbandry, CREA (a public body composed of 12 research centers throughout the national territory) will make available its scientific expertise concerning genetics, physiology, mechanics, robotics, study of innovative technical means for the sustainable management of production, the management of fertility and soil functionality, forestry, the ecology of natural and cultivated environments, livestock, the processes of the agri-food industry, the nutritional properties of food and their optimal consumption to maintain good health and reduce waste, with an eye always attentive to consumer protection. CREA faces with a multidisciplinary approach the great challenges of the twenty-first century related to the sustainability of agri-food production, in the spirit of the principles of the circular economy, the bioeconomy and the transfer of innovation. The environment research group of the CREA-ZA Research Center is engaged in research aimed at improving the environmental sustainability of livestock farming. The group has been involved in several national and international projects concerning environmental issues in the livestock sector such as RENAI, Agrosceinari, SOSZOOT, Aqua LIFE+, SustainBeef, Beef Carbon LIFE+ and, currently, it is engaged in the LIFE Carbon Farming project. The commitment is aimed at studying the environmental sustainability of the different animal production systems, with a Life Cycle Assessment approach, investigating different aspects, such as climate change, eutrophication, acidification, consumption of non-renewable resources and water resources. CREA-ZA also collaborates with several international working groups committed to improving the environmental sustainability of livestock, for example the EU's Technical Working Group (TWG) for the drafting of the Best Available Techniques (BAT) reference document for intensive pig and poultry or pig farming; the Animal Task Force; the Global Research Alliance; the European Commission's Environmental Footprint Technical Advisory Board (EF-TAB) and FAO's Livestock Environmental Assessment and Performance (LEAP) partnership.





## Tool development

In the Beef Carbon Project, the assessment of the environmental impact in Italian beef cattle farms was carried out using the calculation model "Calcul Automatisé des Performances Environnementales en Elevage de Ruminants" (CAP'2ER®) developed in France at the Institut de l'Elevage (Gac et al. 2010; IDELE 2018). This choice was determined by two facts: the first is that this method, while referring to the French production system, has proved suitable for monitoring Italian farms; the second is that in our country there is no shared calculation model at national level of greenhouse gas emissions from livestock farms.

One of the next objectives of CREA-ZA is the development of an Italian carbon footprint calculation tool in livestock farms, adapting the French CAP'2ER® to the Italian situation and translating it into Italian in order to make it available to Italian breeders.

## Future projects

**1- LIFE CARBON FARMING - Development and implementation of a result-based funding mechanism for carbon farming in EU mixed crop livestock systems, (2021 to 2027) €6.5 million, 700 farms in 6 European countries (France, Spain, Ireland, Belgium, Germany and Italy).** This is a project aimed at developing methodologies capable of reducing the carbon footprint of agricultural production systems by 15% in 6 years, developing a financing result-based system, allowing to officially certify the reduction of emissions from farms and the placing on the market of voluntary carbon credits from cattle and dairy farms. This project aims to develop a framework that allows for the creation of the voluntary carbon market on farms that rewards the effort made by them to reduce emissions.

In Italy, it is coordinated by CREA with the following partners: Unicarve, Asprocarne, AIA and CRPA.

CREA is involved and will continue to be so in the coming years, in the presentation of international, national and regional demonstration and dissemination projects, such as those of regional competence, like those of the RDPs.

### **2- CLIMATE FARM DEMO: "A EUROPEAN-WIDE NETWORK OF PILOT FARMERS IMPLEMENTING AND DEMONSTRATING CLIMATE SMART SOLUTIONS FOR A CARBON NEUTRAL EUROPE" (HORIZON 2020)**

Climate Farm Demo is another European project that will strengthen the capacities of European farmers to implement, demonstrate and adopt the practice of climate-smart agriculture (CSF) throughout the EU and reduce their GHG emissions by 35% throughout the EU. life of the project, thus achieving the EU Climate Targets Plan for 2030.

A network of demonstrative farms will be established to boost knowledge sharing on climate-smart agriculture and cross-fertilization systems between the agricultural sectors and EU and national Agricultural Knowledge and Innovation Systems (AKIS).





It is planned to support and advise the Pilot Demo-Farmers in the implementation and demonstration of Climate-Smart Agriculture practices to increase the adoption of innovations and, finally, incentivize the adoption of Climate-Smart Agriculture practices throughout Europe thanks to the methodology standards and relevant reward mechanisms that will support farmers in their systemic transition.

The 7-year project is coordinated by the French IDELE and involved the establishment of a Consortium made up of about 80 European partners (public research bodies, universities, private bodies and private companies) representing 27 EU countries and has a total budget of 23 million euros.

In Italy, the following entities participate: CREA with two of its research centers (Research Centre Animal Production and Aquaculture in Lodi and Research Centre Agricultural Policies and Bioeconomy in Rome) which is the national contact point; Italian Breeders Association (AIA), Apoconerpo which is an organization of fruit and vegetables producers and CRPA.





## Conclusions

CREA has been involved for years in research projects concerning the reduction of environmental impact. Since 2015 it has been working on the LIFE Beef Carbon project. Starting from the experience gained, CREA-ZA plans to verify and improve the mitigation effect of these strategies and, hopefully, to identify and propose new ones. The effort will concern the increase of carbon sequestration, the identification and verification of the most effective and suitable mitigation measures to be used in our territory and the preparation of a credit accounting system, that is precise and feasible, able to record the progress achieved with the application of these measures, framed in a monitoring, reporting, verification and certification protocol.

