CARBON AGRI, a Result-based Carbon Farming Scheme for Boosting Carbon Initiatives in Mixed Crops-livestock Sector

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Livestock Farming in France, A LEADING ACTOR IN SUSTAINABLE DEVELOPMENT

In France, ruminant livestock farming is rooted in the territories, productive, efficient, with a family-based governance and built on a human scale and... PROGRESSES CONTINUOUSLY THANKS TO ITS DYNAMIC NETWORK OF RESEARCH, INNOVATION AND ADVISERS

ILLUSTRATES THE THOUSAND-YEAR-OLD RELATIONSHIP BETWEEN HUMANS AND ANIMALS

ADD VALUE TO LAND AND LOCAL RESOURCES BY COMBINING PASTURES AND CROPS

DELIVER A LARGE VARIETY OF HIGH NUTRITIONAL AND SANITARY QUALITY PRODUCTS TO THE MARKETPLACE

CREATES JOBS AND ECONOMICAL VITALITY IN RURAL TERRITORIES

SHAPES A MOSAIC OF UNIQUE LANDSCAPES AND CONTRIBUTES TO A HIGH-QUALITY ENVIRONMENT
In France, ruminant livestock farming brings some answers to the United Nations 17 Sustainable Development Objectives:

1. No Poverty
2. Zero Hunger
3. Good Health and Well-being
4. Quality Education
5. Gender Equality
6. Clean Water and Sanitation
7. Affordable and Clean Energy
8. Decent Work and Economic Growth
9. Industry, Innovation, and Infrastructure
10. Reduced Inequalities
11. Sustainable Cities and Communities
12. Responsible Consumption and Production
13. Climate Action
14. Life below Water
15. Life on Land
16. Peace, Justice, and Strong Institutions
17. Partnerships for the Goals

SUSTAINABLE DEVELOPMENT GOALS

The French grass-based model is efficient and adaptable, is implementing initiatives linked to the SDO and in line with Paris agreements (COP21):

- Grass-based animals give value to grass and by-products which are non-consumable to humans (sugar beet pulp, rapeseed cake...)
- Bovine exposure to antibiotics decreased by more than 25% between 2011 and 2019
- Dedicated funds help farmers to access training programs in order to develop their skills
- Underground water nitrates content has decreased by 16% in livestock farming regions since 1997
- In 2021, more than 23,000 farms are involved in low carbon initiatives, supported by inter-branch organisations (LifeBeefCarbon, LifeCarbonDairy...)
- More than 2/3 of professional livestock farms are engaged in collective progress initiatives or sector plans (Charter of good practices, PDO, organic farming, label)
EU GHG emissions and carbon sequestration trends

-11% in agriculture

We are here
A 20% potential in reducing GHG emissions

- No difference between production systems...
- but high difference between efficient and less efficient farms

3 316 dairy farms
40 mitigations practices ready to use

<table>
<thead>
<tr>
<th>GHG emissions</th>
<th>Carbon sequestration</th>
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<tbody>
<tr>
<td><strong>Inputs</strong></td>
<td><strong>Cover crops</strong></td>
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<tr>
<td>Pasture management,</td>
<td>Introduce more intermediate crops, more row intercropping and more green manure</td>
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<td>Concentrates and fertilizers,</td>
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<tr>
<td>Legumes, Crops rotation</td>
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<td><strong>Fuel and electricity</strong></td>
<td><strong>Avoid bare soil</strong></td>
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<td>No-till cultivation,</td>
<td>Never leave soil bare and work it less, for example by using no-till methods</td>
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<td>Power and equipment,</td>
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<td>Working organization</td>
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<tr>
<td><strong>Crops management &amp; fertilization</strong></td>
<td><strong>Agroforestry</strong></td>
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<td>Legume fodder crops,</td>
<td>Add to the hedges at field boundaries and favour agroforestry</td>
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<td>Optimization of fertilizers uses</td>
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<td><strong>Herd management</strong></td>
<td><strong>Grassland management</strong></td>
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<td>Improving productivity</td>
<td>Optimize pasture management with larger grazing periods, for example</td>
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<td>Reducing number of unproductive animals, lipids</td>
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<tr>
<td><strong>Feed</strong></td>
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<tr>
<td>Feed efficiency, Forage quality and yield</td>
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<tr>
<td><strong>Manure management</strong></td>
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<td>Time spent in shed vs pasture, Biogas production</td>
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The first step → A reduction of carbon footprint up to 15 to 20%
Mitigation practices for tomorrow

• Feed additives
  • 3 NOP, tanins, algae, citrus

• Manure management
  • Additives, nitrification inhibitors

• Genetic

• Carbon sequestration

• ...
From research to practice
How upscaling low carbon transition?

- Raising awareness among farmers (self assessment, simplified audits)
- Training sessions
- Convince, recruit, and advise farmers in applying low carbon transition
- Funding farm advice and MRV process
- Communicate on initiatives, on progress done
- ....

Objectives
0.5 million farms in France
10 million farms in EU
CARBON FARMING strategy

- Who is contributing for upscaling?
- How measuring farm carbon performance?
- How measuring progress done?
- How supporting farmers for applying mitigation practices?
The partnership developed for involving farmers
The whole farm approach for assessing Carbon performances

Inputs → Pastures and crops → Manure → Livestock → Milk, meat → Crops sold → Feed Straw → Pastures and crops

Carbon and nitrogen cycle

Inputs
Pastures and crops
Livestock
Carbon and nitrogen cycle
Milk, meat
Feeds

Pastures
Crops
Sold
Livestock
Manure
Feed
Straw
Inputs
Feeds

Pastures and crops
Livestock
Milk, meat
A common tool for making the reference/baseline

Methodology: In accordance with IPCC tiers 2&3 and main guidelines

Certified by
CARBON AGRI, a certified methodology for Quantifying, Verifying and Certifying Carbon reductions.

Emission reductions = Carbon credit

Baseline Scenario

Project Scenario

Crediting period

External auditor

Label BAS CARBONE

CERTIFIED

VERIFIED
Monitoring social & environmental co-benefits

Biodiversity & Landscape

Linear meter of hedges
Hectare Grassland

Soil fertility
& Food performances

% Organic matter
Kg protein produced

Air quality

Water quality
Water consumption

Reducing deforestation

Renewable energy
6 steps for supporting farmers in low carbon transition

1. Defining baseline (1st Audit)
2. Building up mitigation action plan
3. Applying mitigation measures
4. Quantifying CO₂ reductions (2nd Audit)
5. Verifying and certifying the carbon reduction
6. Paying farmers for carbon reductions

From reductions quantification to rewarding mechanism
From the audit to the CO₂ reductions quantification
5 years duration
Example of a low carbon action plan applied in a dairy farm

- Quantity of concentrates and lipids
- Age at first calving
- Leguminous
- Hedges

**GHG reduction and carbon sequestration**

Reduction of the milk carbon footprint: 15%
On a 5 year project:
# 300 - 500 tons  # 9 000 € - 15 000 €
France CARBON AGRI
A national aggregator for carbon offset projects

Farmers

Project developers and advice companies

Carbon buyers

Ministry of Ecological Transition

France CARBON AGRI Association
National carbon offset projects in progress

- **Project 1**
  - 301 farmers
  - 22 project developers
  - 138,766 tons CO₂

- **Project 2**
  - 960 farmers
  - 56 project developers
  - 550,000 tons CO₂

# 700,000 tons CO₂ avoided
Where are we now?

- **Information**
  - Training

- **Farm assessment**
  - CAP’2ER

- **Carbon mitigation action plan**

- **Monitoring**

- **Carbon certification**

1. **1 300 farmers**

1. **1 500 French advisers trained for auditing farms**

1. **16 000 farmers involved in a low carbon plan**

Training sessions:
- Farmers
- Advisers
- Cooperatives and Agri food industries
Upscaling low carbon initiatives in EU agricultural systems
Developing carbon rewarding mechanisms in agriculture

- Harmonized tools and standards at EU scale (GHG Emissions & Carbon removals)
- Co-innovation and demonstration actions in farms
- Upscaling carbon rewarding mechanism for farmers
- Feeding the European CARBON FARMING strategy

LIFE CARBON FARMING – 2021/2027
6 countries
50 partners
700 farms

H2020 CLIENFARM – 2022/2025
12 countries
33 partners
1200 farms

H2020 Climate Farm Demo – 2022/2029
28 countries
80 partners
1500 farms
Take home message

Common methodology, whole farm approach, tools interoperability,... for operating low carbon approach

Multi stakeholders' partnership for upscaling low carbon initiatives in farms

Carbon Farming for certifying carbon reductions and boosting farmers involvement
Thanks for your attention