

Carbon farming and certification schemes

– Lessons learned in France

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1. Introduction

Following the publication of the national low-carbon strategy in 2015 by the French government, the Ministry for Ecological Transition (2020) created the “Label Bas Carbone” in 2018. This certification framework is managed by the Ministry and its decentralised administration. The goal of the framework is to certify low-carbon projects in France, across sectors, and to attract funding toward these projects. Through this framework, the French Government wishes to encourage all sectors to reduce greenhouse gas (GHG) emissions, and/or to increase carbon sequestration, as in the case of forestry and agriculture. Then, the ambition is to scale-up by building a low carbon standard on a European scale through a pilot project. Consequently, the LIFE Carbon Farming project was launched in 2021, for seven years, and it involves six countries.

2. State of Knowledge

A Label Bas Carbone project is defined as a project with a limited lifetime that reduces emissions or stores carbon. The tons of carbon dioxide equivalent (CO₂-eq) ‘avoided’ (i.e. emission reduction or sequestration) is determined by comparing a situation where a low-carbon project is implemented with one where there is no change. The latter situation corresponds to a baseline scenario i.e. the position before the implementation of the project. The project must be additional, i.e. go beyond the regulation and would not have been implemented without the Label. Emissions of GHG and carbon sequestration must be verified by an external auditor. Additionally, other indicators must be followed to assess the impact of the project on other environmental aspects. Furthermore, the methodology needs to account for the risk of non-permanence of the carbon sequestration practices.

The first method validated by the Ministry for Ecological Transition was the Carbon Agri method (IDELE et al., 2019), which involves beef, dairy and tillage farms. In the frame of the LIFE Carbon Farming project, the European partners agreed to develop a harmonised MRV (Monitoring, Reporting, Verification) process, based on the Carbon Agri method, with slight adaptations (adding of new low carbon practices for instance). In this method, the overall farm is considered to assess the tons of CO₂-eq avoided, through Life Cycle Analysis (LCA), including the production and the transport of inputs to the farm. The analysis ends at the farm gate (i.e. activities beyond the farm gate, such as product processing, are excluded), and the functional unit used is the kg CO₂-eq/kg of product.

The baseline scenario is determined from an initial carbon audit of the farm, which is carried out by an advisor. Once the baseline is determined, the farmer and the advisor build a mitigation action plan by choosing the most appropriate low carbon practices from a list of available options. These practices cover all aspects relating to the ‘technical’ working of the farm, including inputs, fuel and electricity consumption, crop management, fertiliser application, herd management, feed and manure management, in order to reduce GHG emissions, and land management to increase carbon sequestration. The project lifetime is five years. During this time, implementation of the mitigation practices on-farm is supervised by the advisor, with a mid-term visit to assess if the farmer is on-target and if he or she continues with the low-carbon project or not.

At the end of the project, a final carbon audit is carried out by the advisor to determine the amount of carbon avoided (i.e. reduction and removal of emissions). This calculation is expressed per production unit. It takes into account the year of implementation of the low-carbon practices. Indeed, the earlier a practice is put in place, the greater an impact it has to reduce GHG emissions. Furthermore, other indicators are

monitored in the project: biodiversity, ammonia emissions, water quality, renewable energy production, soya consumption, irrigation, surfaces with plant cover, and quantity of products sold through direct distribution.

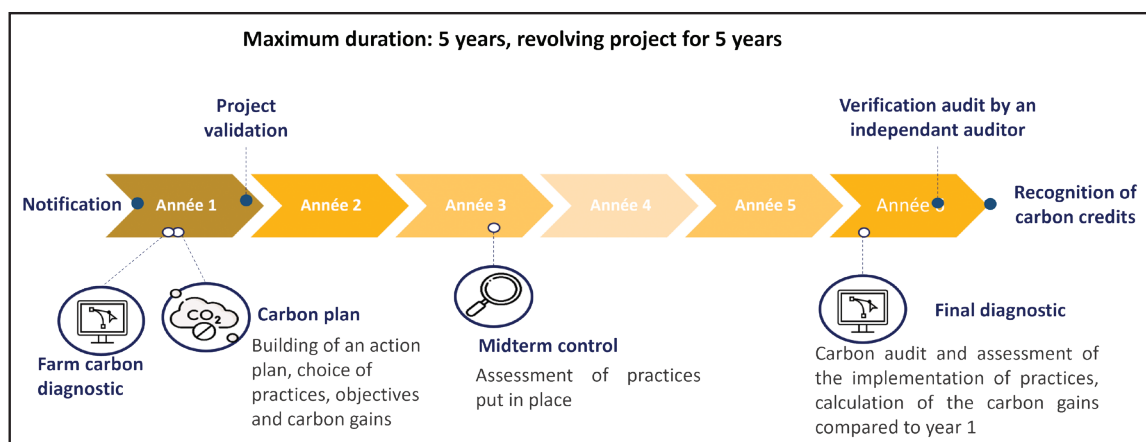


Figure 1: The stages (Année) of a low carbon project in France

According to the simulations carried out in the LIFE Carbon Farming project, farmers decide to put in place around 4 and 5 practices. For instance, one of the LIFE Carbon Farming farms located in France could avoid 435 t CO₂-eq by implementing the following mitigation action plan:

- ▶ Direct seeding on 155 ha
- ▶ Seeding of legumes on 5 ha
- ▶ Increasing grazing length to 75 days per year
- ▶ Improvement of the equipment to spread slurry.
- ▶ Biogas plant

This farmer has 69 dairy cows and 203 ha, of which 164 ha is tillage and 10 ha is permanent grassland. The initial carbon footprint of the milk is 0.86 kg CO₂-eq/L and should be reduced to 0.78 kg CO₂-eq/L. On average, French farms in the LIFE Carbon Farming project should avoid 600 t CO₂-eq during the 5 years of their projects. Applying this LIFE project's goal of avoiding 15% of emissions in 5 years to average Irish beef and dairy farms, we obtain the following results:

Table 1: Projected avoided emissions and carbon income for typical Irish farms in a 5-year low carbon project

Enterprise	Suckler Beef	Dairy
Farm size, ha	34	40
Stocking rate, LU/ha	1.6	2.1
GHG emission, t CO ₂ eq/ha	6.2	11
GHG emission, t CO ₂ -eq/farm	210	428
Carbon price, euro/t CO ₂ equiv.	32	32
LIFE carbon farming targets	15	15
Emissions avoided, %	15	15
Emissions avoided, t CO ₂ equiv./farm	31	64
Carbon income, euro/farm	992	2048
National targets		
Emissions avoided, %	25	25
Emissions avoided, t CO ₂ equiv./farm	53	107
Carbon income, euro/farm	1696	3424

3. Implications for stakeholders

a. Farmers

Through several European, national and regional programs, farmers have been involved in low-carbon projects. In France, most of the time, the recruitment and the follow-up of these farmers is carried out by local organisations such as regional Chambers of Agriculture, breeders’ associations, cooperatives and advisory companies. To qualify for low-carbon projects, French farmers must commit to do the following activities:

Two carbon assessments with an advisor at the beginning and at the end of the project, meaning that several data and documents must be made available to fill in carbon audit tools.

Building of a carbon action plan listing the practices to be put in place and the objectives to be reached.

Implementation of low carbon practices on farms. The action plan can be changed at any time by adding new practices or on the contrary withdrawing planned ones.

Formalise their involvement with a contracting procedure.

Comply with the external audit at the end of the project.

The certification process aims at rewarding farmers for their results. If the initial targets are not reached, there will be no consequence for the farmer, except that the payment will be lower than expected.

b. Policy makers

In France, policy makers took the lead and created the Label Bas Carbone certification framework, enabling the submission of sectoral methods by experts and stakeholders. These methods are verified and approved by the Ministry. Its role is then to validate the files received from project developers and therefore to certify these low carbon projects. At the end of the projects, once the external audit has been carried out by an independent auditor and the tons of CO₂-eq avoided verified, the Ministry finally recognises the emissions reductions. The Ministry is also constantly exchanging with the developers of methodologies to clarify if needed the implementation of the methods on field, and to discuss about the changes to bring to the methods.

c. Industry

The Label Bas Carbone certifies emissions reductions. These certificates are sold on the voluntary carbon market. In order to avoid double-counting, once the certificates have been purchased by a company, they are not transferable to another one, and the identity of the funder is published on a register of the Ministry. The companies buying these certificates are from a wide variety of sectors, including agri-food industries, but also banks, luxury companies etc., and have diverse low-carbon strategies. Some of them aim to reduce the GHG emissions on all of their value chain, including scope 1, scope 2, and scope 3. For example, Lidl France chose to pay its beef suppliers to implement low-carbon projects on their farms. Other companies buy these Label Bas Carbone certificates to voluntarily offset their residual emissions or to contribute to the low-carbon transition.

Finally, following a recent law approved by the parliament, coal-fired power plants have the obligation to offset their emissions. The price defined in French law specifically addressing these types of emissions is €50/tonne of CO₂-eq, and it is mandatory to fund French low-carbon projects, such as Label Bas Carbone projects.

d. Aggregator

The aggregator is the organisation whose role is to make the link between the farmers, the advisory companies, the Ministry for Ecological Transition and the companies buying carbon credits. In France, breeders’ associations decided to create France Carbon Agri (FCAA, 2021) to endorse this role of aggregator. The missions of the FCAA are:

- ▶ Act as a representative for the farmers. This means that it carries out the administrative process to propose farmers’ files to the Ministry to get the labelling.

- ▶ Make the link with the external auditor.
- ▶ Propose low-carbon projects to companies wishing to contribute to the low-carbon transition by funding the farmers.

To formalize these partnerships, FCAA draws up contracting procedures specifying the obligations of the farmer, the advisor and the buyer, including the price of the carbon credit sold by FCAA. Today it is at €40/tonne of CO₂-eq including €32 for the farmer, €5 for the advisory company and €3 for the FCAA. It represents around €19,000 for a farm avoiding 600 t CO₂-eq, corresponding to an income of €115/ha.

4. Future research needs

In 2022, the European Commission published its proposal for a Union certification framework for carbon removals (European Commission, 2022). This framework would work with a panel of experts validating the methods submitted and verification by an external auditor. Furthermore, it would take into account general indicators of sustainability, not only those related to GHG, and it would deal with the issues of additionality and long-term storage. According to trilogue negotiations, this framework would only certify carbon sequestration and soils emissions reductions. However, the commission will be in charge of a report to assess the feasibility of including livestock emissions reductions, by July 2026. In the meantime, first methodologies are expected to be published by the end of 2024. Moreover, a Union-wide registry will be created to identify certified carbon removal units.

Simultaneously, the European Commission is also investigating the possibility to include the agricultural sector in an emissions trading system. To that extent, it raises the question of what part of the value chain should bear this pricing of emissions. Three options have been analysed at the moment: on-farm ETS (for all GHG or livestock or peatlands emissions), upstream ETS (fertiliser producers and importers), and downstream ETS (meat and dairy processors).

5. Conclusion

Funding the transition towards a low-carbon agriculture is an integral part of the European strategy to become the first climate neutral continent by 2050. The Label Bas Carbone created by the French Ministry for Ecological Transition is one of the ways to earmark funds towards low-carbon projects in France. It also ensures the quality of these projects by verifying the emissions reductions and monitoring other environmental indicators. To upscale this French initiative, it has been expanded to five other countries in Europe with a pilot project, the LIFE Carbon Farming project. On a larger scale, the European Commission decided to create a certification framework too, that should be published at the end of 2024. Furthermore, alongside the increase of low-carbon projects, rules must be clarified regarding funding opportunities, and how they are considered between offsetting, contribution or emissions reduction.

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