LIFE
Beef Carbon

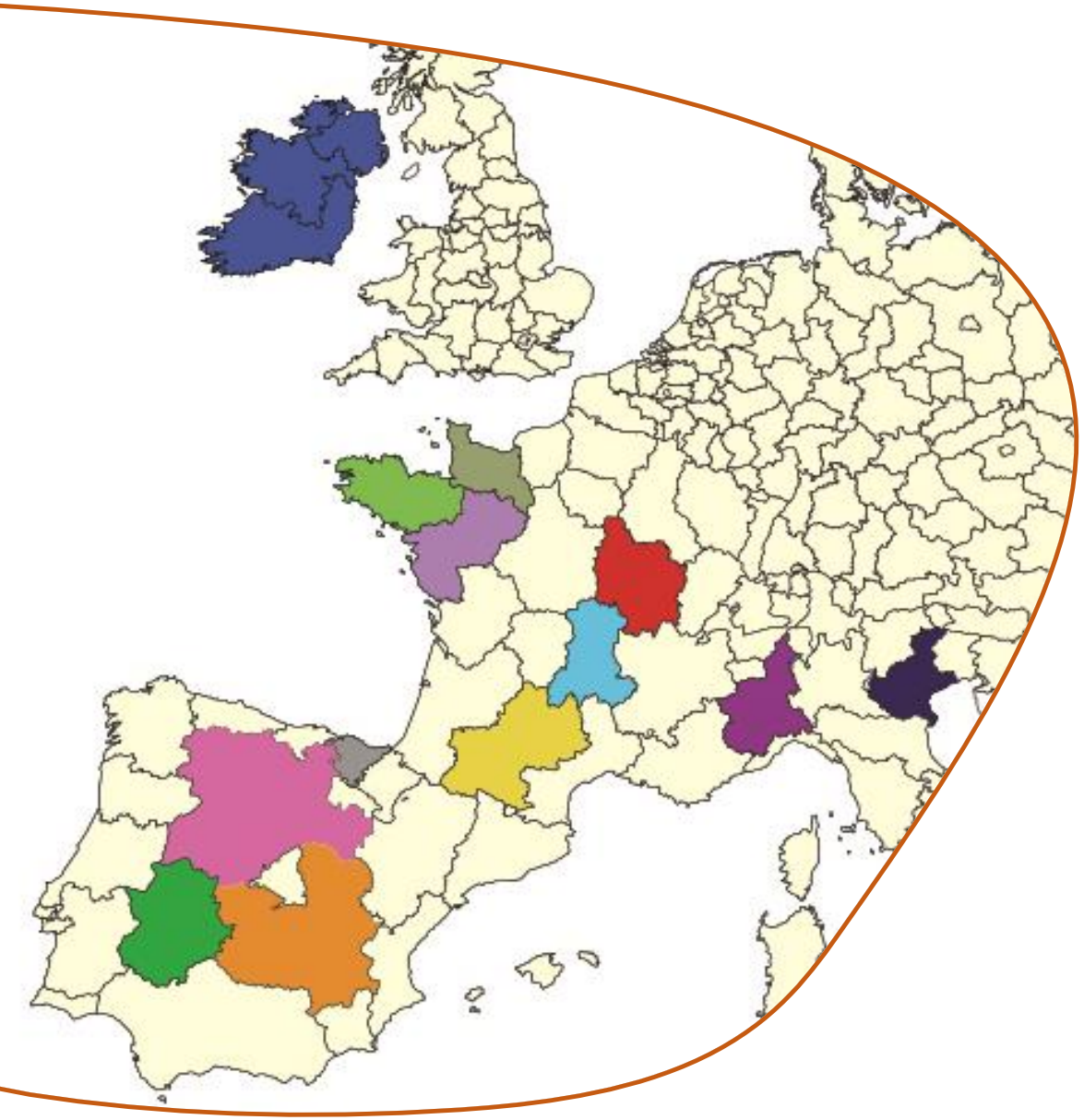
Reducing beef carbon footprint

Layman's report

LIFE Beef Carbon project

LIFE stands for L'Instrument Financier pour l'Environnement [Financial Instrument for the Environment] of the European Union. This programme finances projects related to the environment, nature conservation and climate within Member States. Since 1992, the LIFE programme has co-financed over 4,500 projects. During the 2014-2020 financing period, this programme will have financed projects for the environment and climate worth €3.4 billion.

Scope and Objectives



Reducing beef carbon footprint by -15% in 10 years

- 4 countries representing representing 32% of the EU cattle herd
- 6 years from 2016-2021
- 2,012 demonstrative farms representative of EU beef systems
- 172 innovative farms with individual implementation of mitigation carbon action plans
- 250 advisers trained to GHG assessment

The problem

Beef production generates 6% of all man induced greenhouse gases (GHG) emissions. Most of it is linked to biogenic methane enteric fermentation. These GHG are emitted throughout cattle's life and are therefore difficult to reduce in a simple way.

The LIFE Beef Carbon solution

The project characterizes each beef system of EU beef production regarding GHG emissions and carbon sequestration through the assessment of 2,012 demonstrative farms.

In parallel the mitigation techniques are identified and quantified regarding their GHG mitigation and carbon sequestration potential on 172 innovative farms. The economical impact of those solution and their acceptability by farmers are also evaluated.

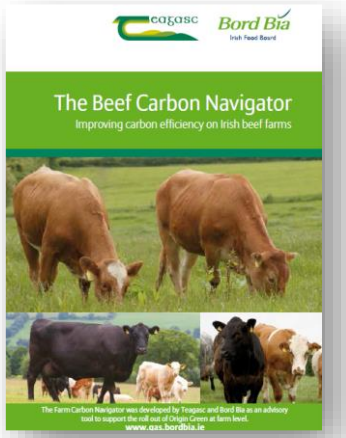
The environmental impacts of those solutions are also measured throughout the life of the project to avoid tradeoff and identify correlations.

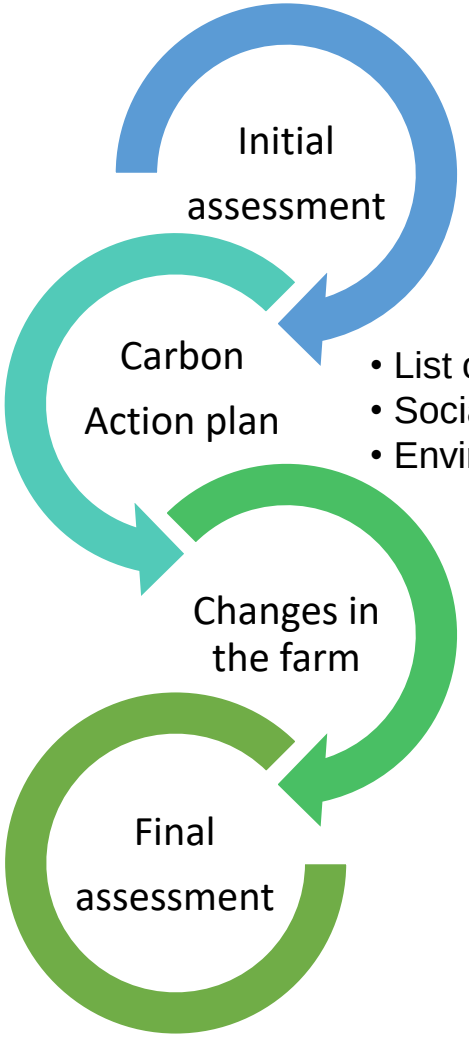
Finally, an after LIFE Beef Carbon action plan is built in partnership with all the stakeholders from the beef sector in France, Ireland, Italy and Spain to disseminate mitigation practices to all beef farms at a national level.

Methods

3 harmonized tools ready to use

- User and farmer friendly
- Taking into account nationals system specificities
- Link between environmental results and farming practices
- GHG and carbon sequestration quantification
- Environmental burdens characterization





- In years 2017-2018

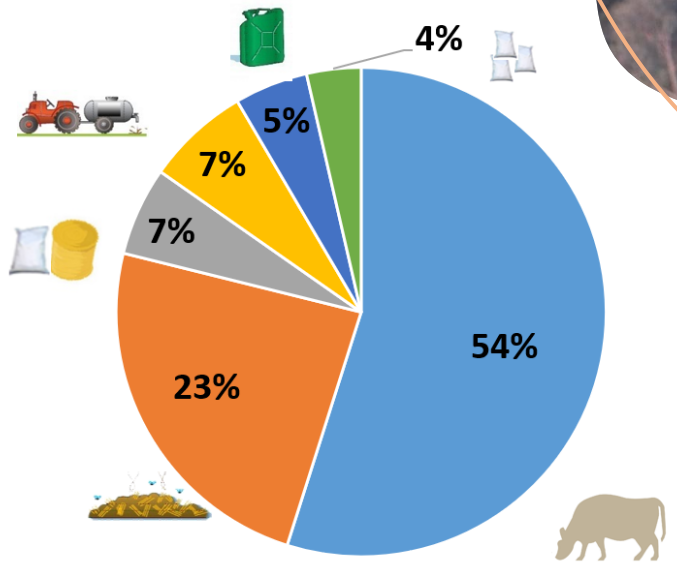
- List of system evolutions
- Social and economic impact
- Environmental Impact

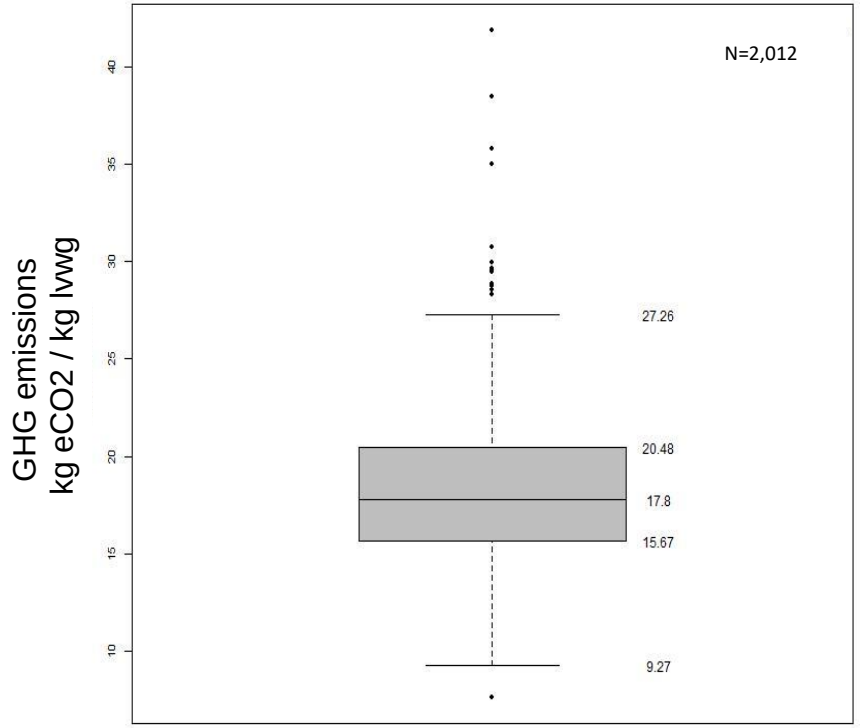
- Advisers support implementation of actions with farmers
- Adjustment if necessary

- In years 2020
- Quantify GHG mitigation and other impacts

Different steps of the implementation of a carbon action plan on a beef farm

Results





GHG emissions variability within LIFE Beef Carbon 2,012 farms

Distribution and variability of emissions on the 2,012 farms from the LIFE Beef Carbon project

- Enteric methane represent more that 50% of GHG emissions on a CO_2 equivalent basis
- Carbon sequestration compensate one third of the GHG emissions
- A case-by-case farm approached needed to improve
- Huge variability between farms that reflects system optimization
- There is a mitigation potential on all sources of emissions and carbon sequestration

➔ Improving technically the beef farms will improve GHG emission

Farms centered technical solutions

- Potential of mitigation of -15% without changing systems
- Most of this improvement potential could be achieved without impacting negatively farms economic indicators
- No tradeoff between net carbon footprint of the farms and environmental indicators
- Farmers are sensible to GHG mitigation to communicate about their systems and to improve the sustainability of their farms

Source: Bord Bia

Results

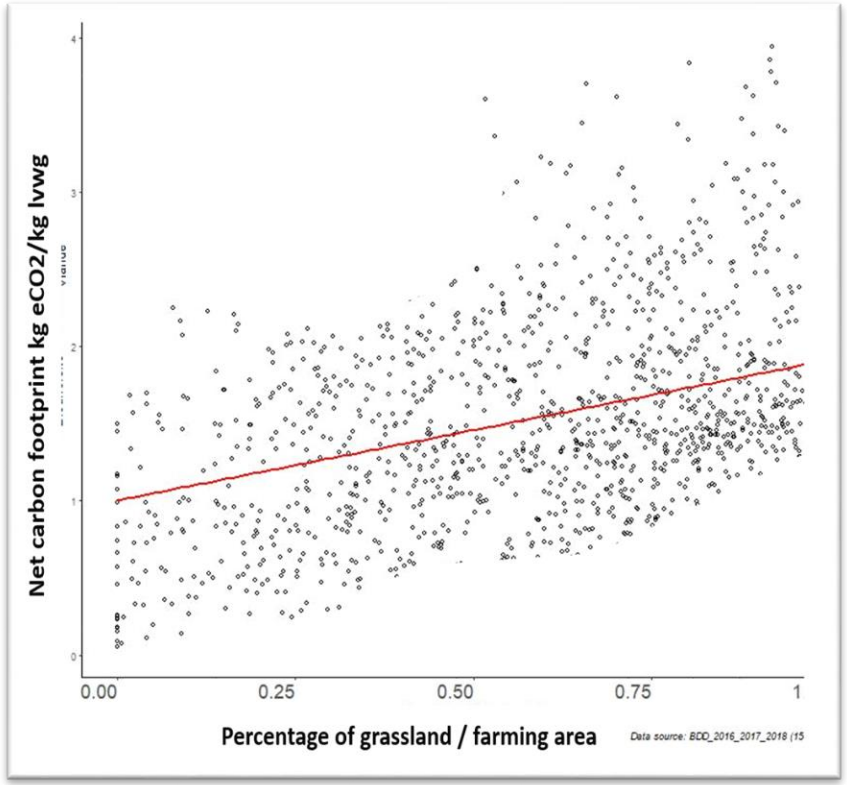
Cattle feeding	2-4 %
Herd performance	8-12 %
Ressources consumption	1-2 %
Manure management	3-7 %
Fertilisation management	3-4 %
Carbon sequestration	2-8 %

Potential to improve carbon footprint dependant on the family of mitigation techniques
(Please bear in mind that these percentage are not cumulative)

Benefits and Impacts

Environmental and socio economic impacts of the LIFE Beef Carbon projects

- Mitigation of 87,528 tons of C02 equivalent during the LIFE Beef Carbon project
- Positive correlation between net carbon footprint and biodiversity, water quality, air acidification and carbon sequestration
- These positive correlations are mainly linked with positive effects of grasslands and hedgerows when manage properly
- The 10% of farms with the best economical results are also among the farms with the lowest GHG emissions
- There is a strong need to take into account carbon sequestration linked to beef farming in national GHG inventories.
- An approach based solely on life cycle analysis will induce a specialization of territories and a loss of ecosystem services in European agricultural systems.



Positive correlation between net carbon footprint mitigation and percentage of grassland in the farming area

LIFE Beef Carbon project Transfer

European networking

In order to disseminate information and best practices in Europe, extensive networking campaigns have been organized that enable to reach more than 500 stakeholders and researchers from 10 European countries. In particular, the LIFE Beef Carbon project has been invited to present his results at all the COP from the Paris agreement.

32 conferences, demonstration and testimonies during professional events and 36 press articles permitted to reach directly more than 2,500 beef farmers. Additional TV and radio interviews were also organized.

At the end of the LIFE Beef Carbon project, the 4 countries involved have also 172 trained innovative farmers and more than 250 advisers ready and familiar with communicating about beef and GHG emission to other farmers but also toward civil society.

Just the beginning of the low carbon journey

Finally the project was the catalyzer of 4 beef carbon action plans aiming to reduce net carbon footprint in all the beef farms within their country. These action plans involve all the stakeholders from beef production: feed suppliers, farmers, slaughterhouses, agro industrials, butcheries, distribution, interprofession, genetic selection, advising companies, veterinaries, farms accountants and nongovernmental organizations.

Specific dissemination projects concerning good farmnig practices are already using tools and results from the LIFE Beef Carbon program. At a European level: BovINE, the European beef innovation network, or ClieN Farms to achieve climate neutrality in European farms. At a national level, with some regional programs: low carbon good practices guideline, carbon crediting platform, low carbon certification scheme, supply chains initiatives…

LIFE Beef Carbon

Project location: France, Ireland, Italy, Spain

Project start date: 01/01/2016
Project end date: 31/12/2021

Total budget: 5,460,512 €
EU contribution: 3,276,300 €