

LOW CARBON AGRICULTURE :

MAIN LESSONS & ISSUES FROM THE CROP « LABEL BAS CARBONE » APPROACH



Agenda

1. Low Carbon Agri – what is at stake ?
2. The french « Label Bas Carbone » crop method

EU GHG/carbon targets

2020

2030

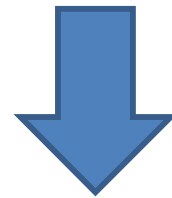
2050

Emissions reduction / 1990

Balance

-20%

-40%

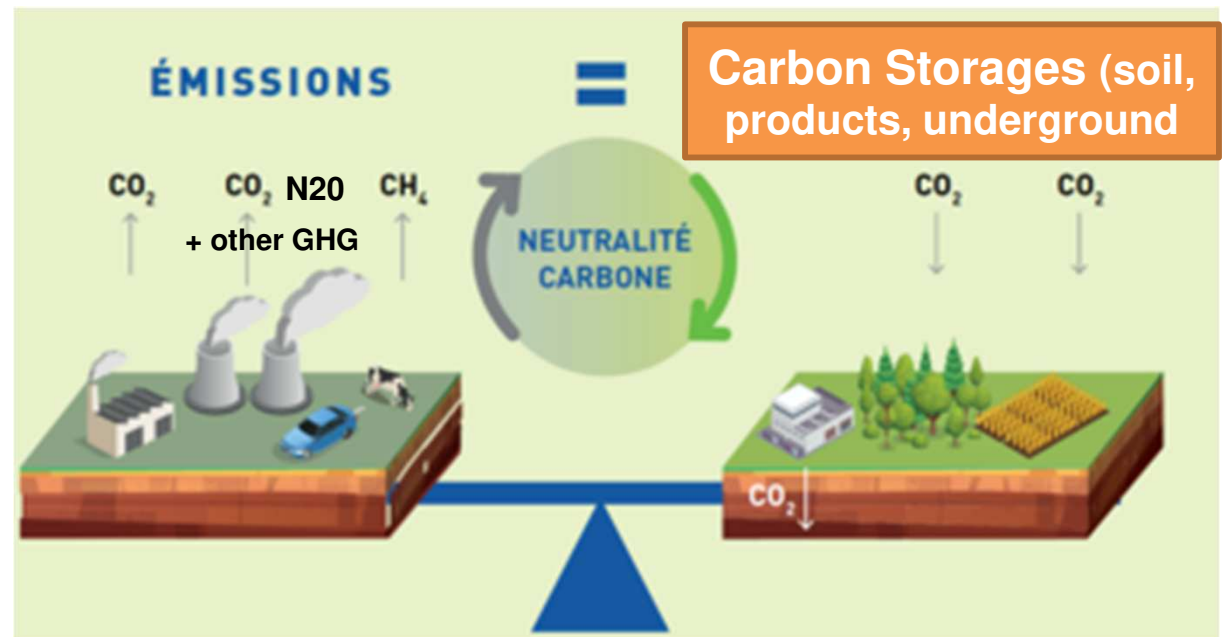


-55%

**Carbon
neutrality**

Carbon neutrality

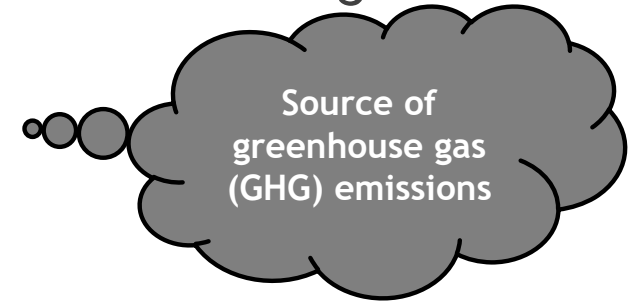
- Three key concepts to understand
 - Reducing carbon emissions
 - Increasing carbon storage
 - Carbon neutrality



Carbon & Agriculture

□ And Agriculture ?

- “Agricultural activity is one of the causes of climate change...
- ...but also one of the solutions



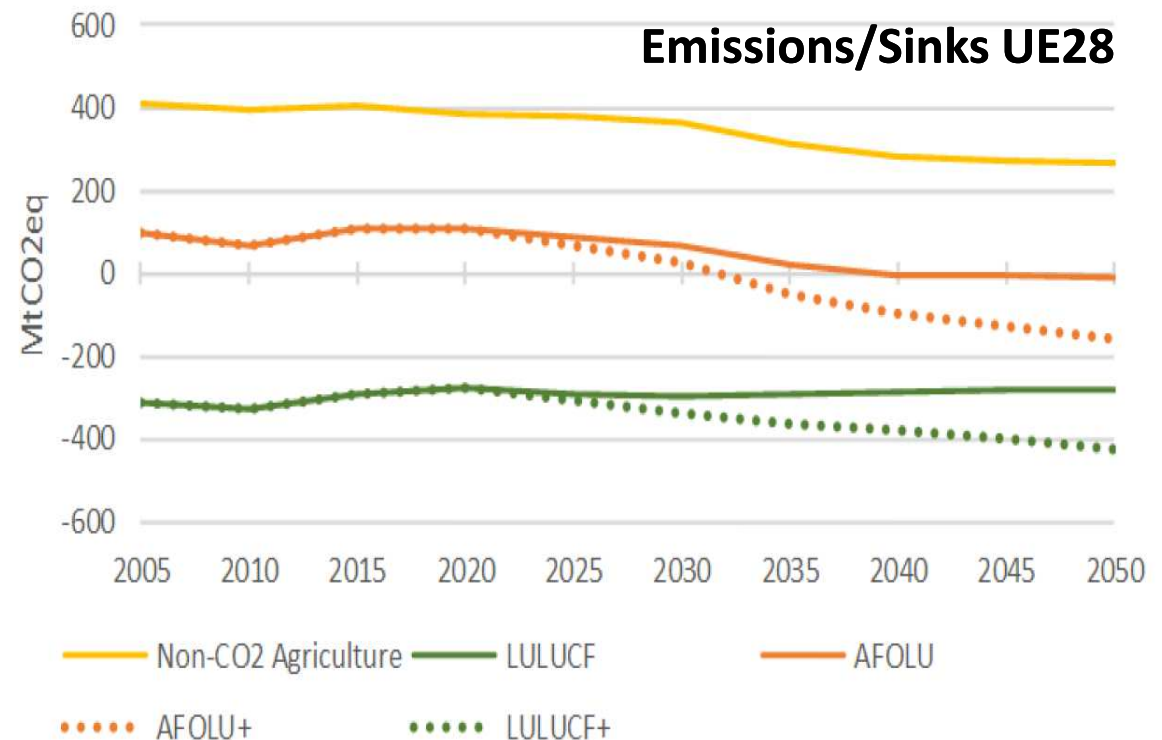
2 challenges for agriculture:

1. Reduce its emissions
2. Increase soil carbon sequestration

Green Deal / Farm to Fork

4p1000 initiative :

- Intermediate crops
- Agroforestry
- Hedges
- Grasslands
-

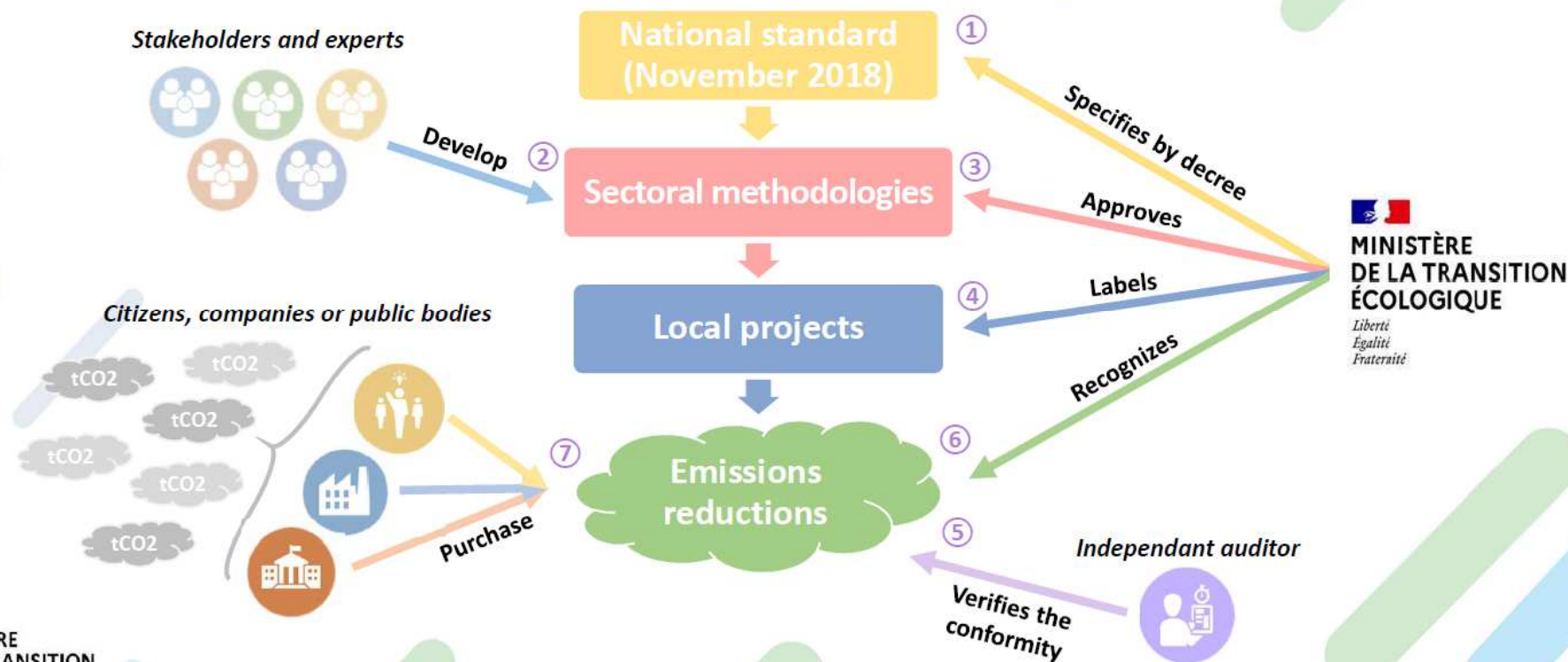


The French low carbon label

Created and entered into force in November 2018
Incentive for Local GHG emission reduction projects
(avoided emissions+ carbon sequestration)

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II. Functioning of the label



❖ The scheme is open to all types of investors (public or private, national or foreign) but projects must be located in France (mainland or overseas)

II. Requirements and safeguards

- Emission reductions are **monitored accurately** (discounts may apply) and **verified by an independent and qualified auditor**, according to modalities specified in the method.
 - **Additionality** is assessed relative to a **baseline scenario**, determined in the method :
 - ✓ Likely situation in the absence of labelling
 - ✓ **Regulatory requirements** and **common practice**
 - ✓ **Incentives provided by other instruments** than the label
- Only emissions reductions that go beyond the baseline scenario are recognized

- Taking into account the **risk of non-permanence** and of **release of carbon**, by applying discounts



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II. How to manage uncertainty

- Need to find a balance between MRV cost and robustness
- Use of discount (ex: -10%/-20%) for specific part of the calculation
- Discounts are used for :
 - In case of uncertainty of the datas
 - In case of uncertainty of the relevance of parameters
 - To deal with **non permanence** of emissions reduction or removals
- Discounts are applied depending of the methodology and the project
 - Ex: In Forest project, discounts level linked with the risk of forest fire depend of the region in France
- A methodology can include different options depending of the quality of the data/parameters



The French low carbon label - Methods

Approved	Approved	Under development
Carbon Agri – Livestock farming (CAP'2ER)	Agroforestry (hedges) CROP	Sheep – Goat breeding
Orchard plantation	SOBAC'ECO-TMM – input's reduction	Agroforestry (alley cropping)
	Ecomethan	Methanisation
		Pig breeding
		Viticulture
		Pulses plants
		Perfume plants

→ Development of methodologies mainly driven by the private sector but public funding can be useful



The sector-based low-carbon arable crop method



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Crop method

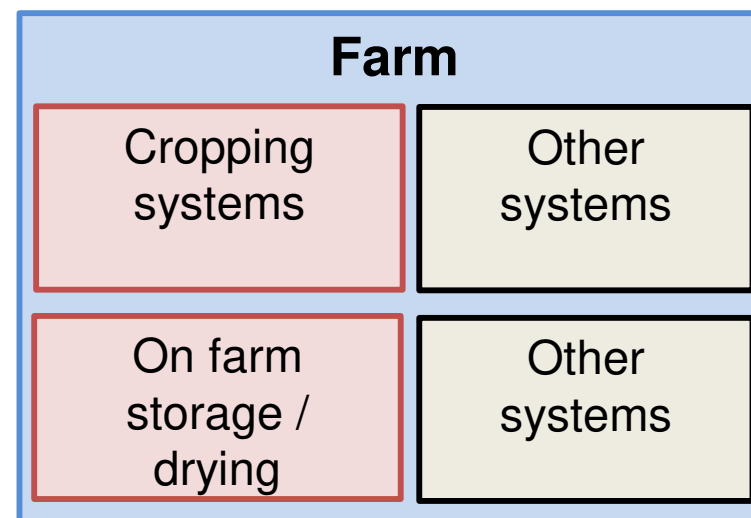
Drafted in 2020 by Field Crop technical Institutes

Large inclusive & scientific approach

Approved in August 2021

Carbon credits = GHG reduction (emission + soil carbon storage)

Scope



Monitoring committee



Drafting committee



Scientific committee

I4CE, INRAe, Ademe, DGEC

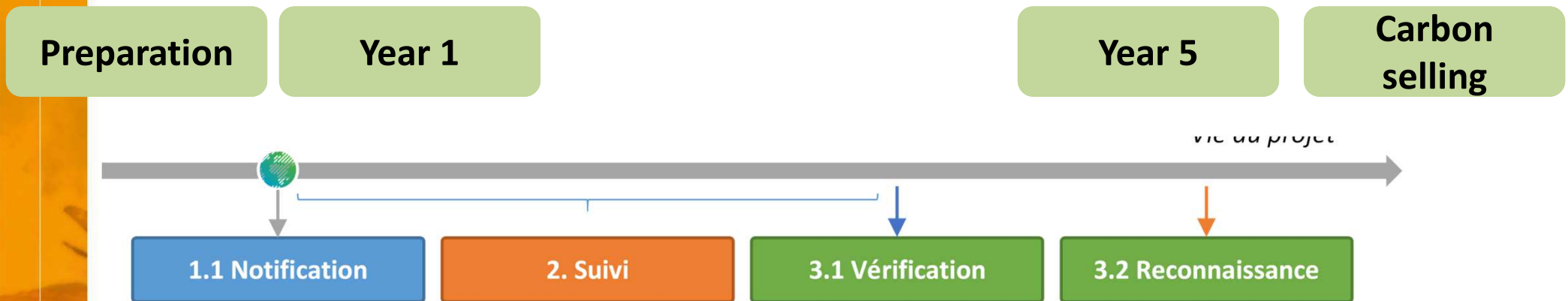
Experts committee

INRAe et autres experts R&D

Users committee



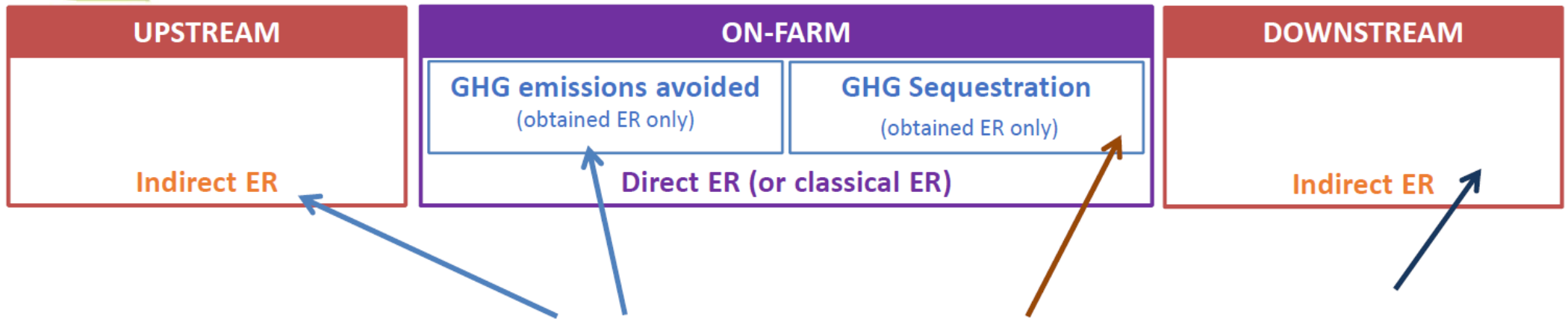
LBC agri project timeline



The sector-based low-carbon arable crop method

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Crop method

Scope of emission reductions



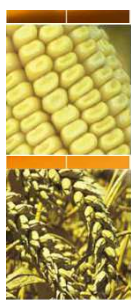
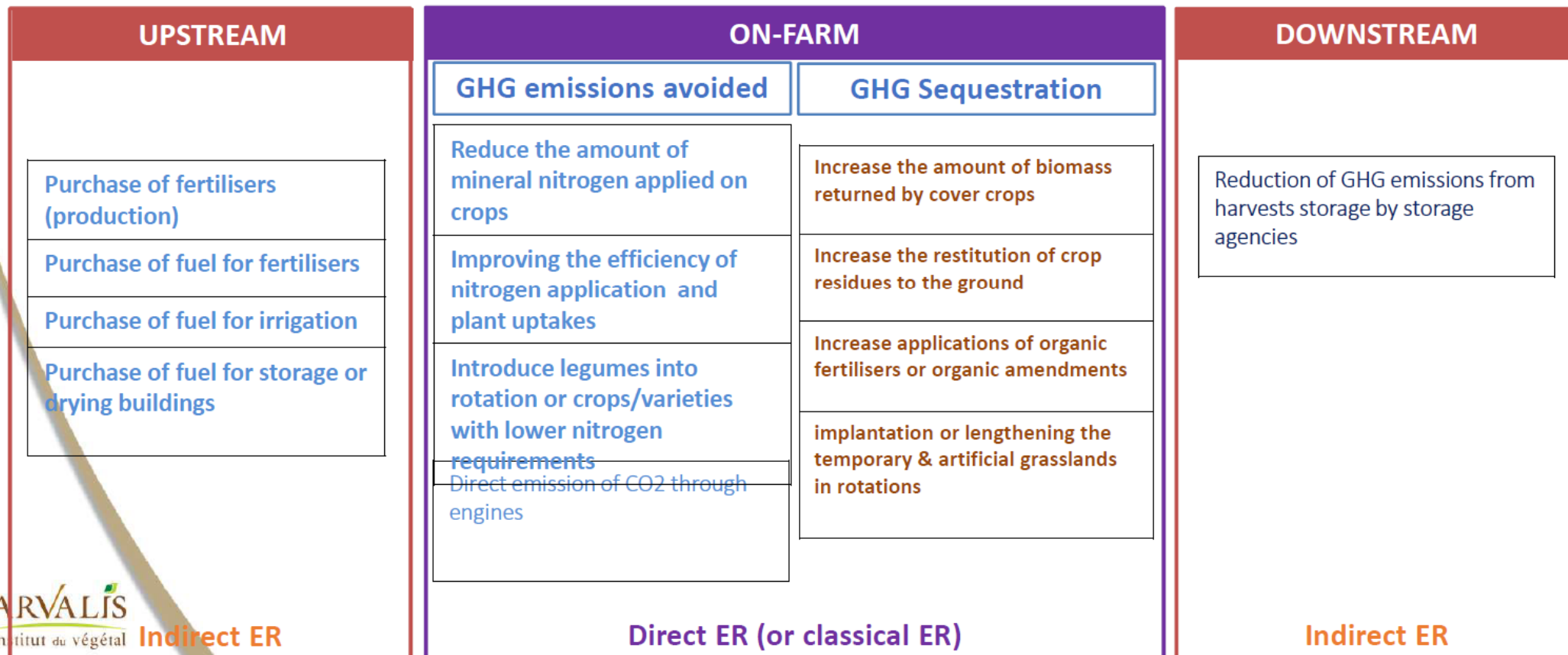
$$\text{Emission Reductions} = ER_{emissions} + ER_{SOC\ storage} + (ER_{downstream})$$

- Emissions avoided and removals are included but calculation are separate
- **Possibility to include upstream and downstream of GHG emissions** of the projects if the methodology is robust (ex: emission factor of the production of synthetic fertilizer)
- By default only Emissions reduction during the duration (5 years) of the project
- For Carbon removal in biomass, possibility to include anticipated removal
=> Not applied in this method

The sector-based low-carbon arable crop method

Scope of actions : examples

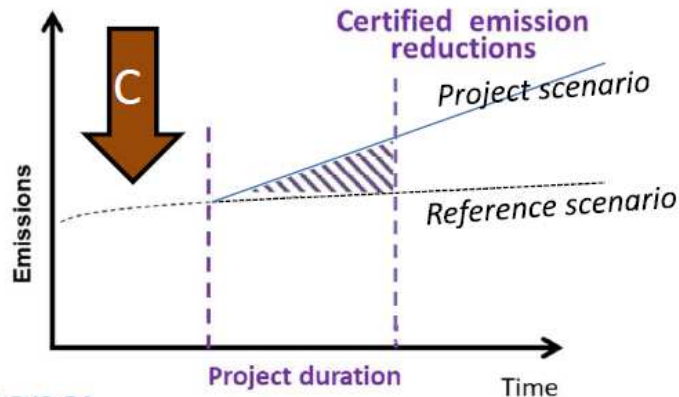
- ✓ The eligible levers can be chosen for each project:



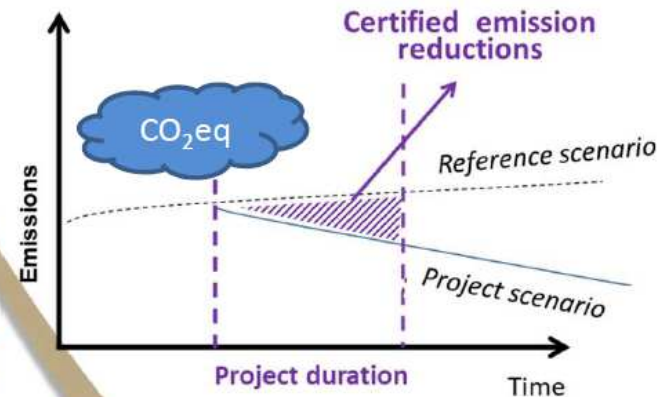
The sector-based low-carbon arable crop method

For each cropping systems, Soil Carbon storage **AND** GHG emissions have to be calculated

ER SOC storage:



ER emissions:



ARVALIS
Institut du végétal

✓ **Compulsory to calculate both as soon as one lever is chosen**

Why?

for example:

- a lever storing more SOC could be the increase of biomass restitution to the soil by cover crops.
- A way to reach this goal could be the nitrogen fertilisation on cover crops.
- But more fertilisers would also mean an increase in GHG emissions.

The project has to check that :

$$ER_{\text{emissions}} + ER_{\text{SOC storage}} > 0$$



Two types of references can be used depending on the kind of data available on the farm:

- "Specific reference" : use real data from the farm (the 3 years before project)
- "Generic reference": a database made up from French statistics and surveys on farms; at the department level

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Crop method

The sector-based low-carbon arable crop method

Co-benefits evaluation

References also available for co-benefits



✓ Estimation of other impacts and co-benefits of the projects

Pressure on resources and air or water quality

- ✓ Amount of nonrenewable (or low) resources
- ✓ Soil quality
- ✓ Air quality
- ✓ Water quality



A set of indicators proposed

- ✓ Soil erosion in medium- or high-erosion hazard zones
- ✓ Non-renewable energy consumption
- ✓ Ammonia emissions (air quality)
- ✓ Risks of nitrate leaching (water quality)

Biodiversity

- ✓ Aerial biodiversity (cultivated or uncultivated areas)
- ✓ Underground Biodiversity



A set of indicators combined if the stakeholder wants to follow biodiversity

Socio-economic and societal impacts

- ✓ For the producer
- ✓ For the territory
- ✓ For society



Several indicators to choose according the local challenges

✓ *To highlight additional services provided by the climate projects*



The sector-based low-carbon arable crop method

Critical points

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Crop method

Methods complementarity + extension of agri scope

Additionality

Small & variable amount of carbon credits / hectare

Measurement : operational tools + Farm scope/level diagnosis

Scientific robustness / acceptability / confidence:

- The most up-to-date and precise soil carbon storage model; can be extended to other countries
- Combined measurement of GHG Emissions + Carbon storage

Carbon credit prices & costs

- **Result based carbon approach**
 - **Targeting voluntary carbon markets**
 - **Additional revenues** from private market beyond public subsidies = **additional to the CAP support**
-
- A broad consortium gathered with among the best specialists working on SOC storage, GHG emissions and co-benefits and stakeholders
 - The most up-to-date and reliable references used
 - The references and the models are adapted to the contexts (field crops, France but possible for other countries)
 - The projects will be made up with farmers, fitting for their own farms

Public regulatory market expansion : aviation mandate ?