

# LOW CARBON AGRICULTURE :

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

March 9th , 2022  
DG AGRI Carbon Press Tour - Nantes

# Agenda

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

# EU GHG/carbon targets

**2020**

**2030**

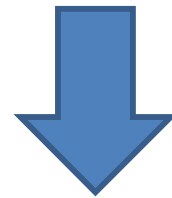
**2050**

**Emissions reduction / 1990**

**Balance**

**-20%**

**-40%**

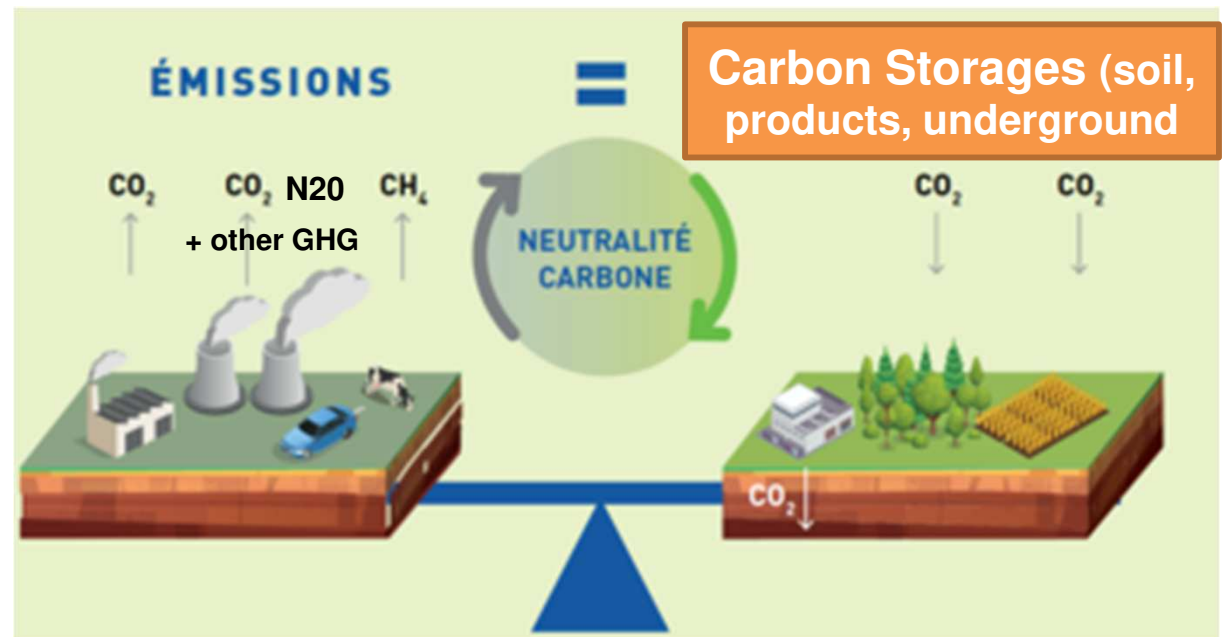


**-55%**

**Carbon  
neutrality**

# Carbon neutrality

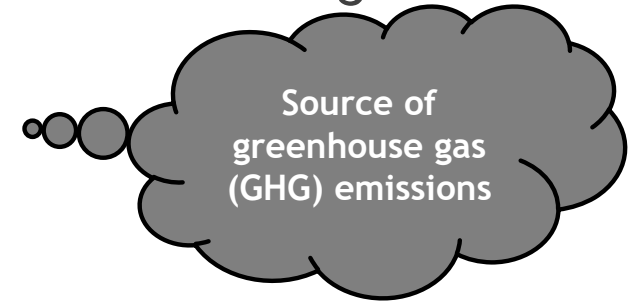
- Three key concepts to understand
  - Reducing carbon emissions
  - Increasing carbon storage
  - Carbon neutrality



# Carbon & Agriculture

## □ And Agriculture ?

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



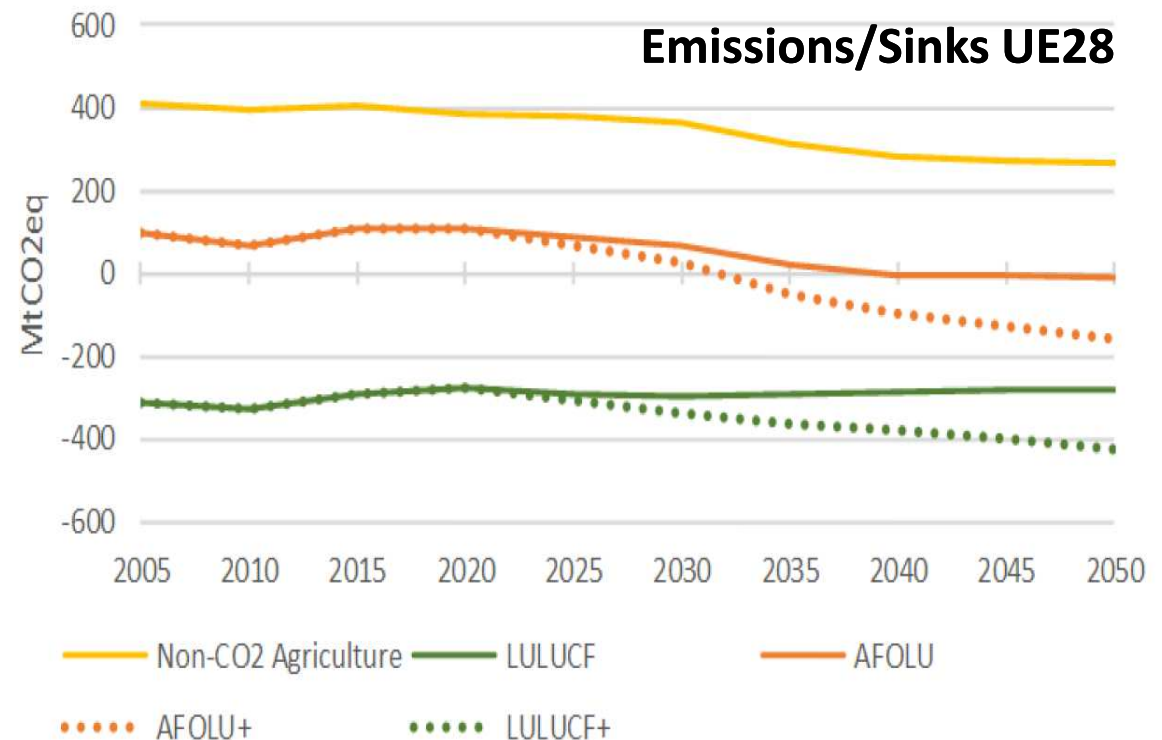
## 2 challenges for agriculture:

1. Reduce its emissions
2. Increase soil carbon sequestration

## Green Deal / Farm to Fork

### 4p1000 initiative :

- Intermediate crops
- Agroforestry
- Hedges
- Grasslands
- ....

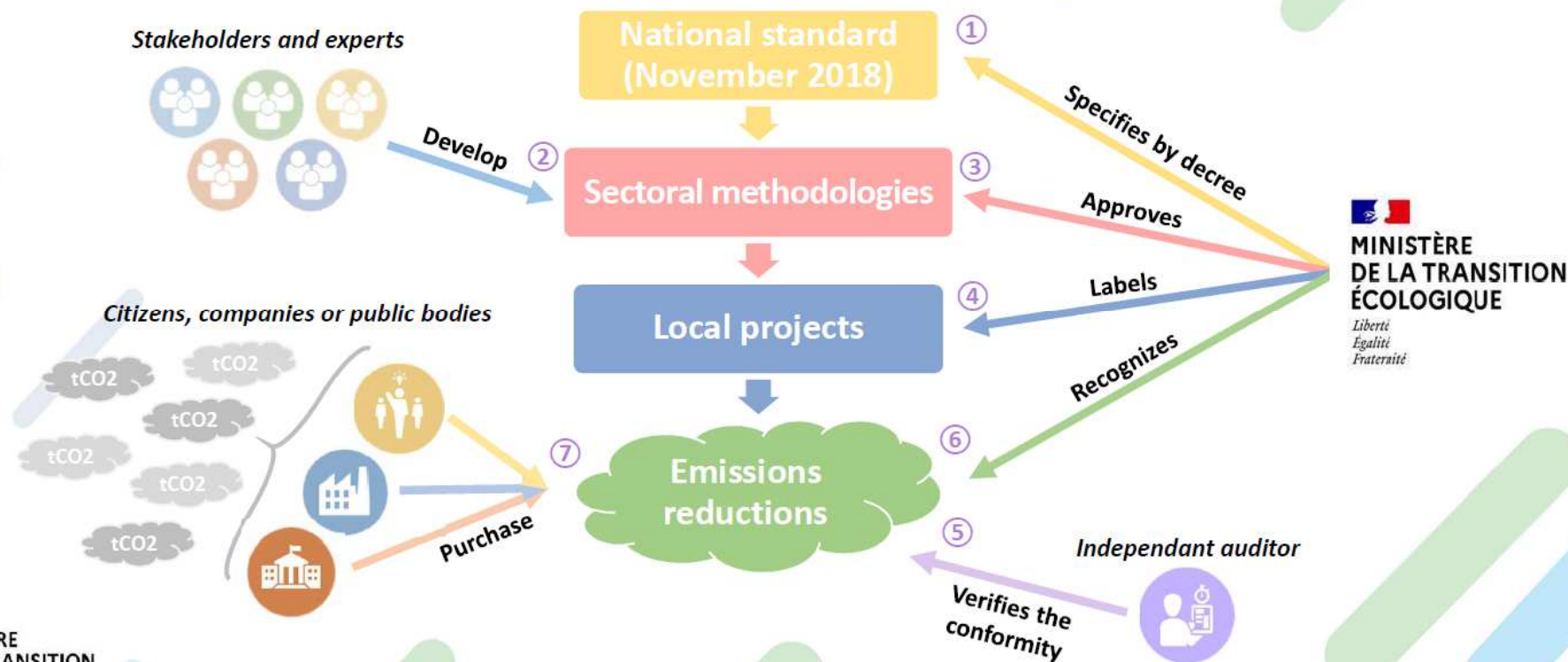


# The French low carbon label

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

**LABEL BAS CARBONE**

## 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 reduction 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



## LABEL BAS CARBONE

## 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) <b>CROP</b>	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

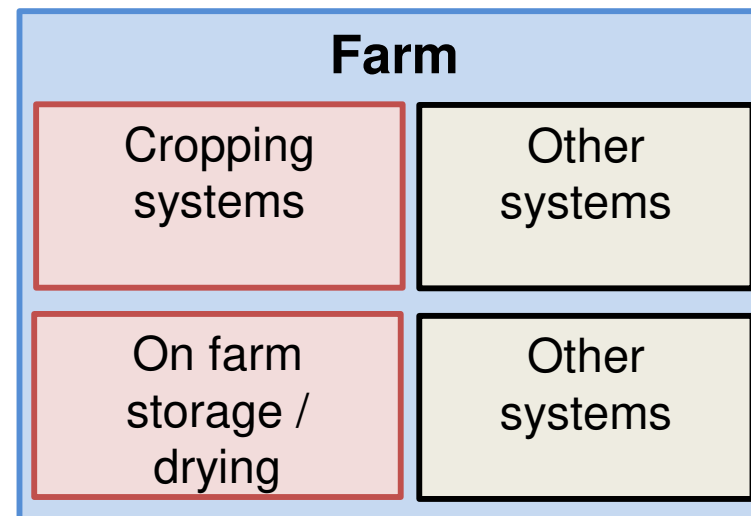
**Drafted in 2020 by Field Crop technical Institutes**

**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

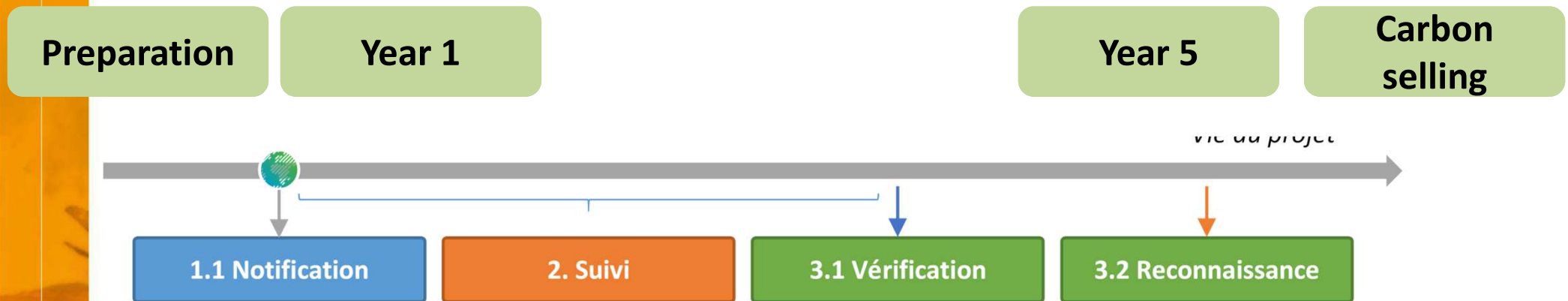
### Experts committee

INRAe et autres experts R&D

### Users committee



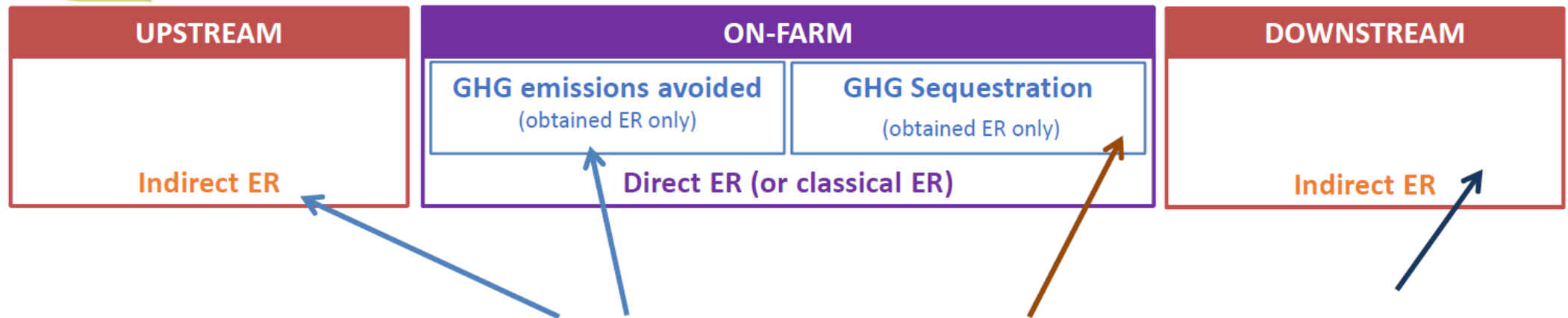
## LBC agri project timeline



# The sector-based low-carbon arable crop method

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Crop method

## Scope of emission reductions



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

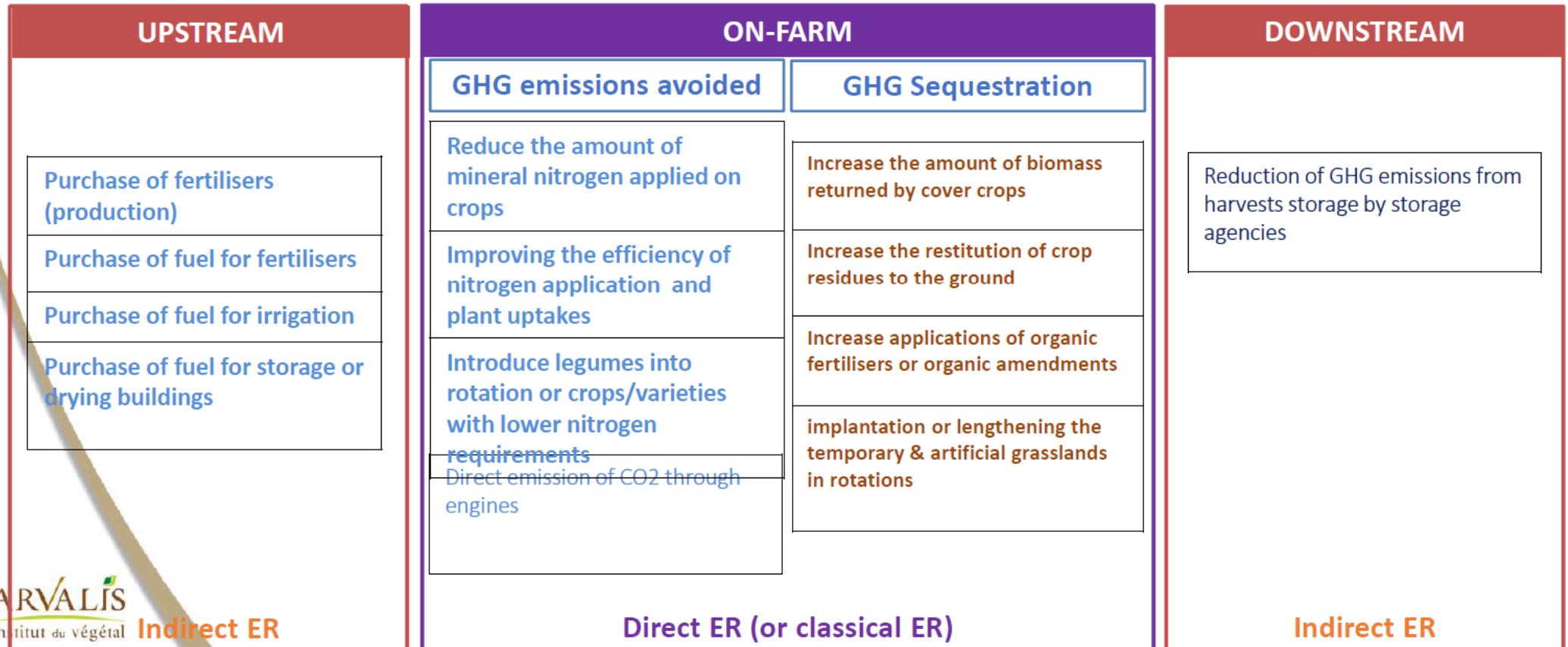
- Emissions avoided and removals are included but calculation are separate
- **Possibility to include upstream and downstream of GHG emissions** of the projects if the methodology is robust (ex: emission factor of the production of synthetic fertilizer)
- By default only Emissions reduction during the 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

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

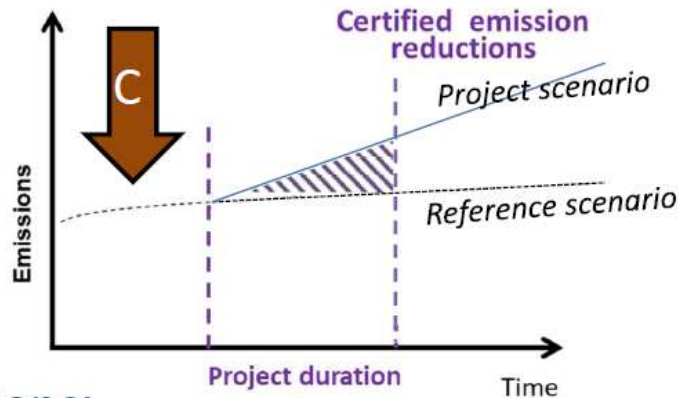




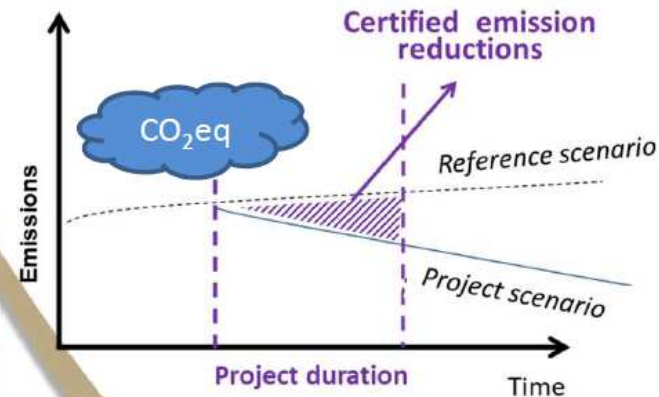
# The sector-based low-carbon arable crop method

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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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 ?