

Land owner's associations to promote ecosystem service evaluation

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Coordinator

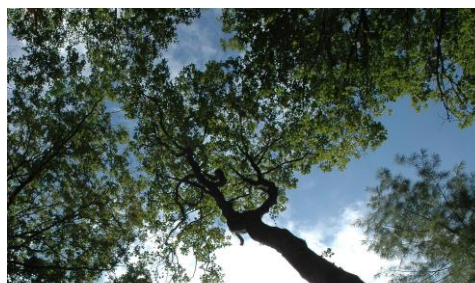


Partners



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**LABEL BAS
CARBONE**

The French example of the Label Bas-Carbone

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Forestas

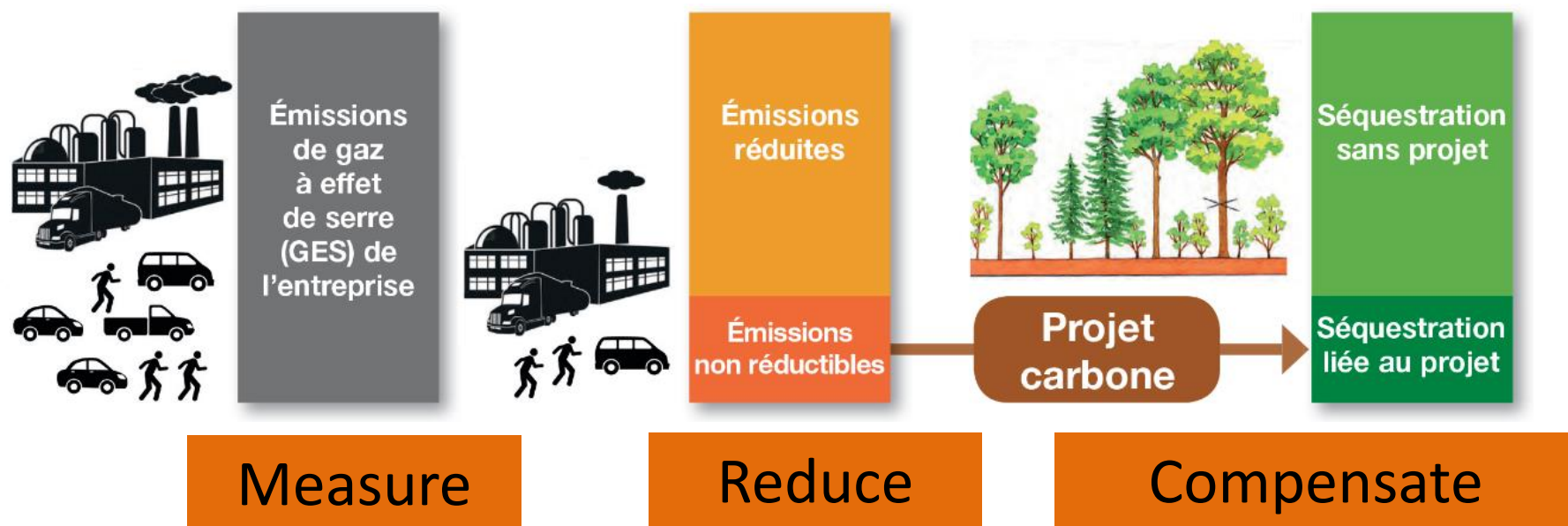
Agência florestal regional pro a sivilizaçã de su
territóriu e do aambiente de sa Sàrdigna
Agencia forestale regionale per lo sviluppo del
territòriu e dell'ambiente della Sardegna
SardegnaForeste



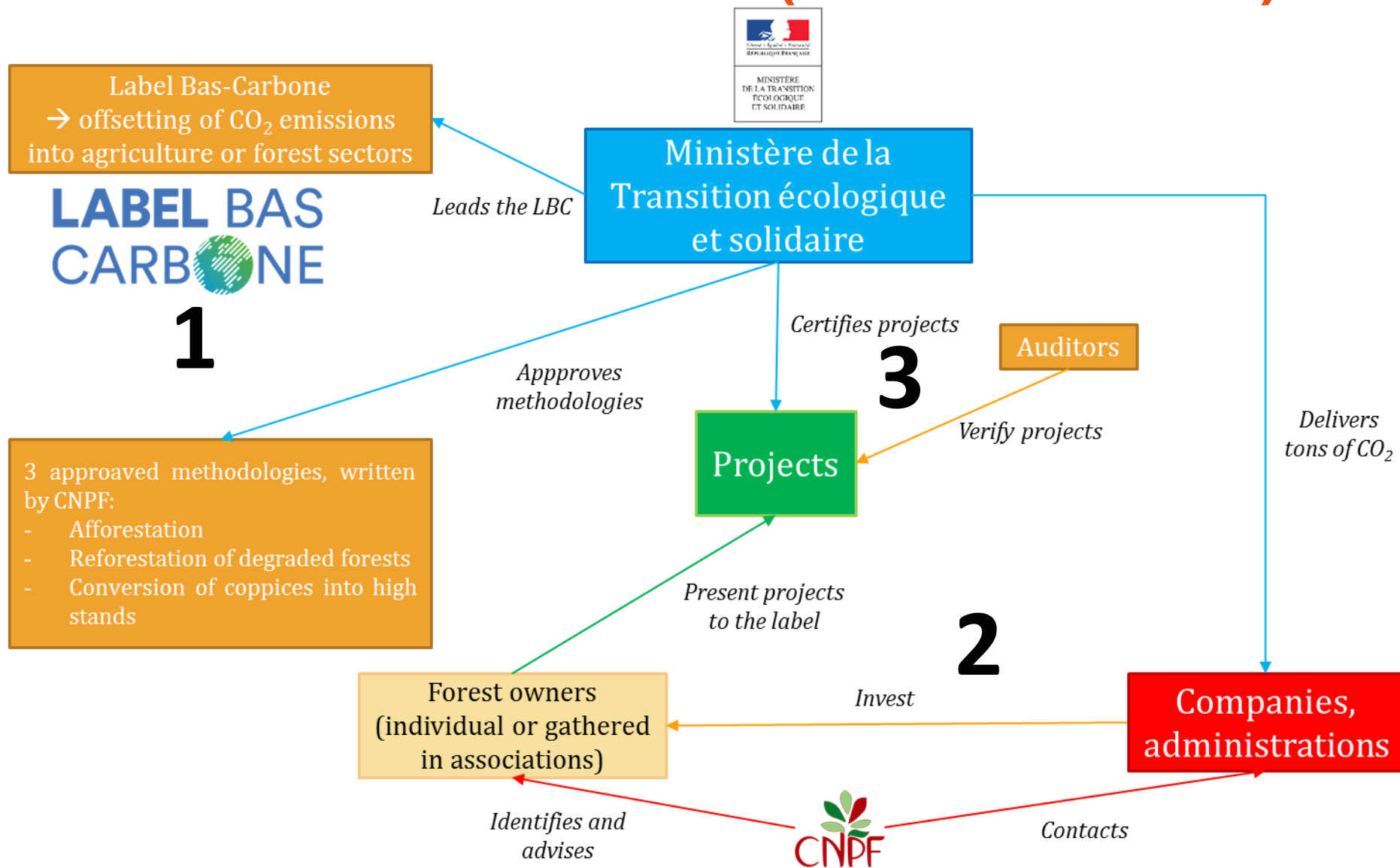
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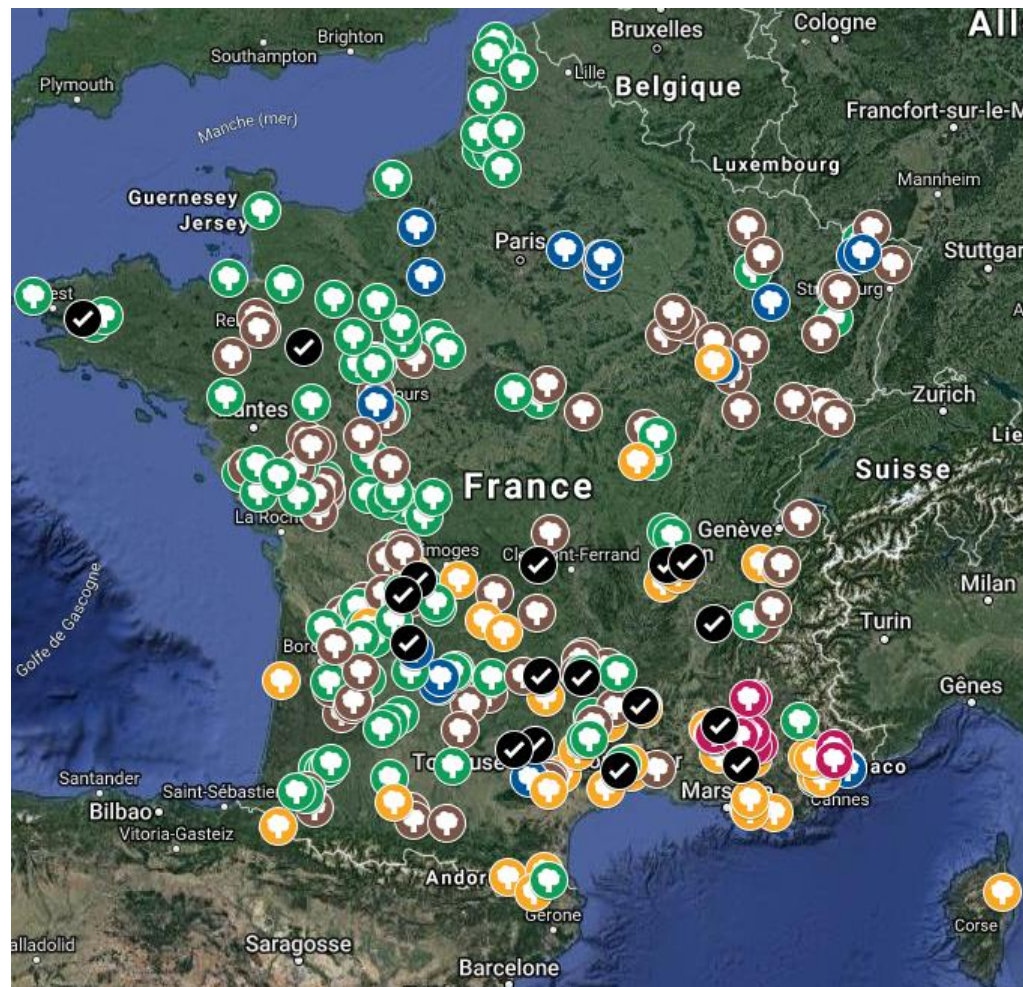
What's a carbon offset project ?



The « label Bas-Carbone » (low-carbon label)



CNPF's potential carbon offset projects



We offer 4 main types of carbon offset projects, opened to private investments:

- **Green:** afforestation
- **Brown:** Reforestation of impacted forests (storms, fires, intensive diebacks)
- **Blue:** afforestation of low density in forests
- **Orange:** improved forest management, such as conversion of coppice to high stand or fire risk prevention particularly in Mediterranean area

NB: projects in **dark** are yet completed

Some examples of completed projects



Afforestation on an abandoned field with 8 broadleaved trees
(**ASLGF** des Cévennes ardéchoises, Ardèche)

Some examples of completed projects



Reforestation after a forest fire in a young stand of *Pinus nigra* ssp. *salzmanii* (**ASLGF** Cévennes ardéchoises)

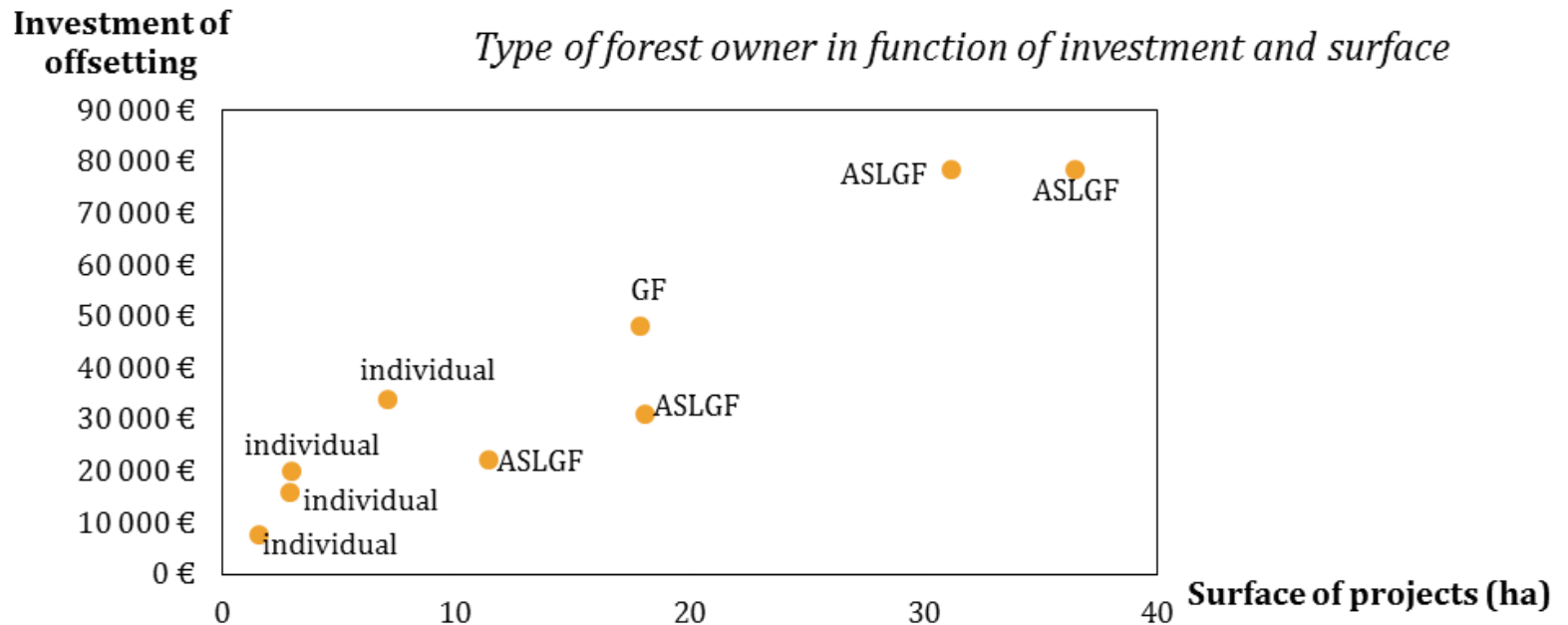
Some examples of completed projects



*Conversion of chestnut coppices into high stand forests (**ASLGF** Forêt Agir Limousin, Haute-Vienne)*

The benefit of taking part of a forest owner association

- In many areas in France, **fragmentation of forest** holdings can be important... → it can constitute an obstacle to sustainable management
- In France, we have a methodology called “**ASLGF**” (association of forest management) to group forest owners and encourage them to manage forests.
- **The highest is the investment**, the most appropriate is the association of forest owners



Convergence on a current topic: climate change mitigation by CO2 emissions offsetting. Few European countries launched their own CO2 emissions offsetting register:

- ❑ Green Deal (Netherlands, 2011) (forest methodology soon ?)
- ❑ Woodland carbon Code (United Kingdom, 2011)
- ❑ Registro de huella de carbono, compensación y proyectos de absorción de CO2 (Spain, 2014)
- ❑ Label Bas-Carbone (France, 2018)

Establishment of the methodological and scientific bases of the assessment of the carbon footprint of cork oak management in the Massif des Maures

Blondel Paul 2018

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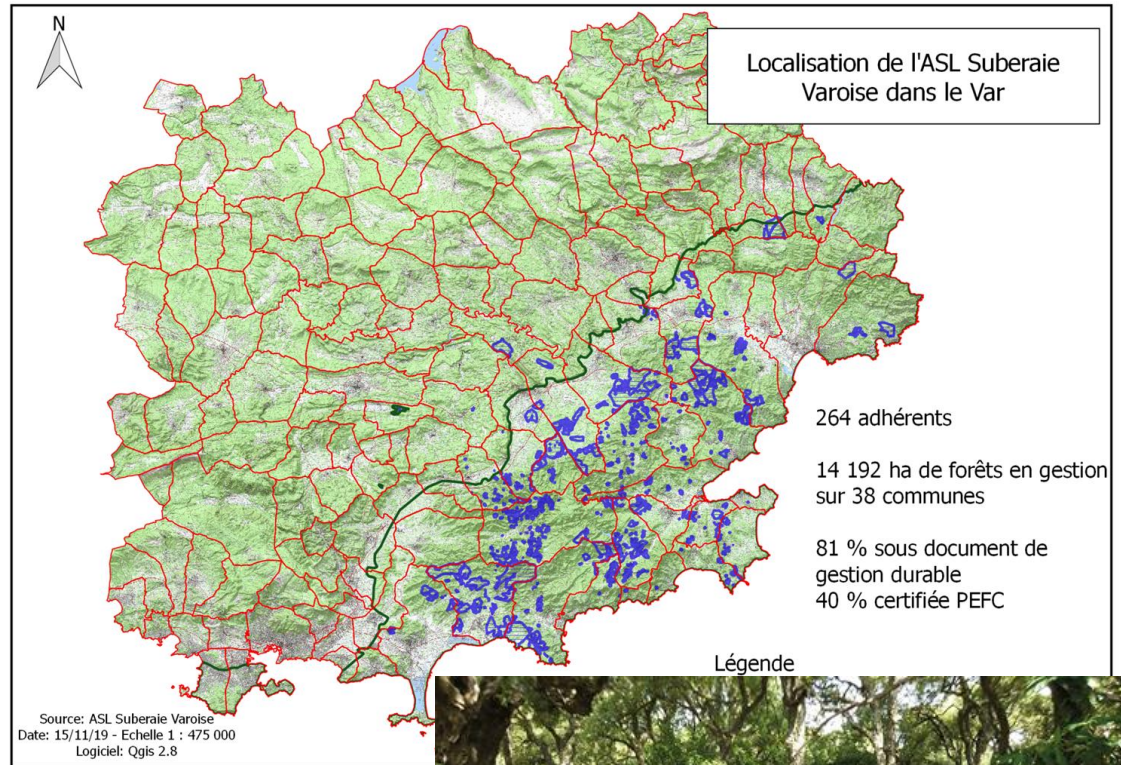
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Study area



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Owners's association created in 1991 after a fire

En 2019 : 264 owners for 14 192 hectares



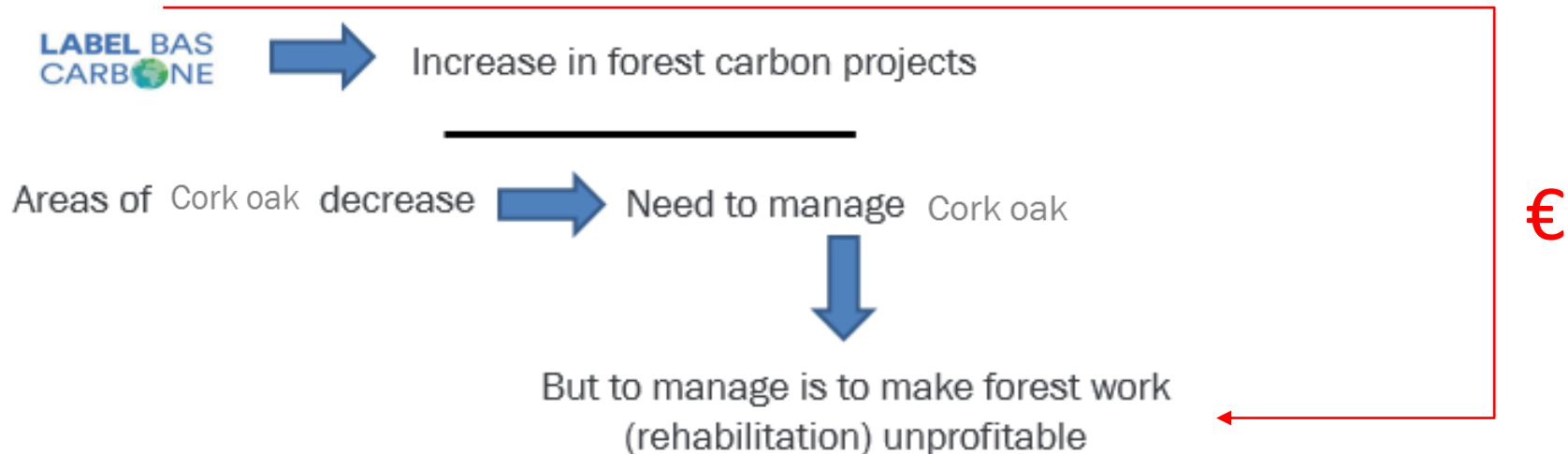
81% have a sustainable management document
40% with PEFC accreditation



Study objectives

1. Determine the **scientific basis** for a study of the carbon footprint of suberaie
2. Establish a **clear methodology** for this evaluation
3. Using these tools **to study a cork oak plantation project**

Contexte of the study



Context of the study

Context n°1



Clear suberay

- *No management*
- *No investment*
- *Risk*



Context n°2



Clear suberay + plantation

- Management suberaie + plantation
- Investment
- Decrease Risk

Methodology

Estimation of the Carbon Balance

Context n°1



Context n°2



STORAGE



Exploitation



VS



SUBSTITUTION

SEQUESTRATION



CO₂

Growth

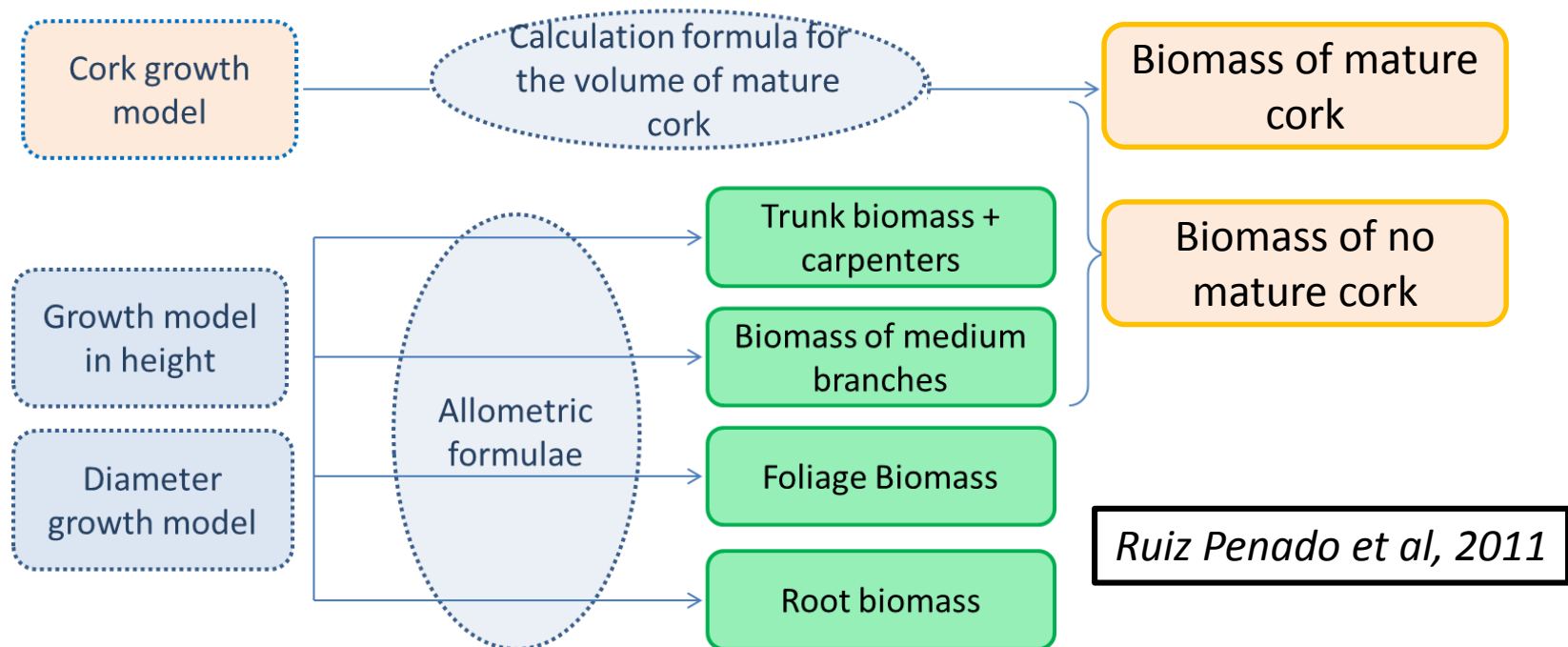


Methodology

BIBLIOGRAPHY
MODELS OF GROWTH + FIELD DATA = ADAPTED MODEL

*Sanchez-Gonzalez et al
2005*

SEQUESTRATION



Methodology

SUBSTITUTION

- Analysis of local markets cork oak
- Analysis of substitution cork oak
- Calculation of the substitution coefficient

Wood's substitution

Local market:



1000 kg used wood

=

- 60 kg de CO2

Cork's substitution

Local market:



77%



23%



1000 kg used cork

=

- 740 kg de CO2

Methodology

STORAGE

- Estimated life span (wood, cork)

Wood's storage



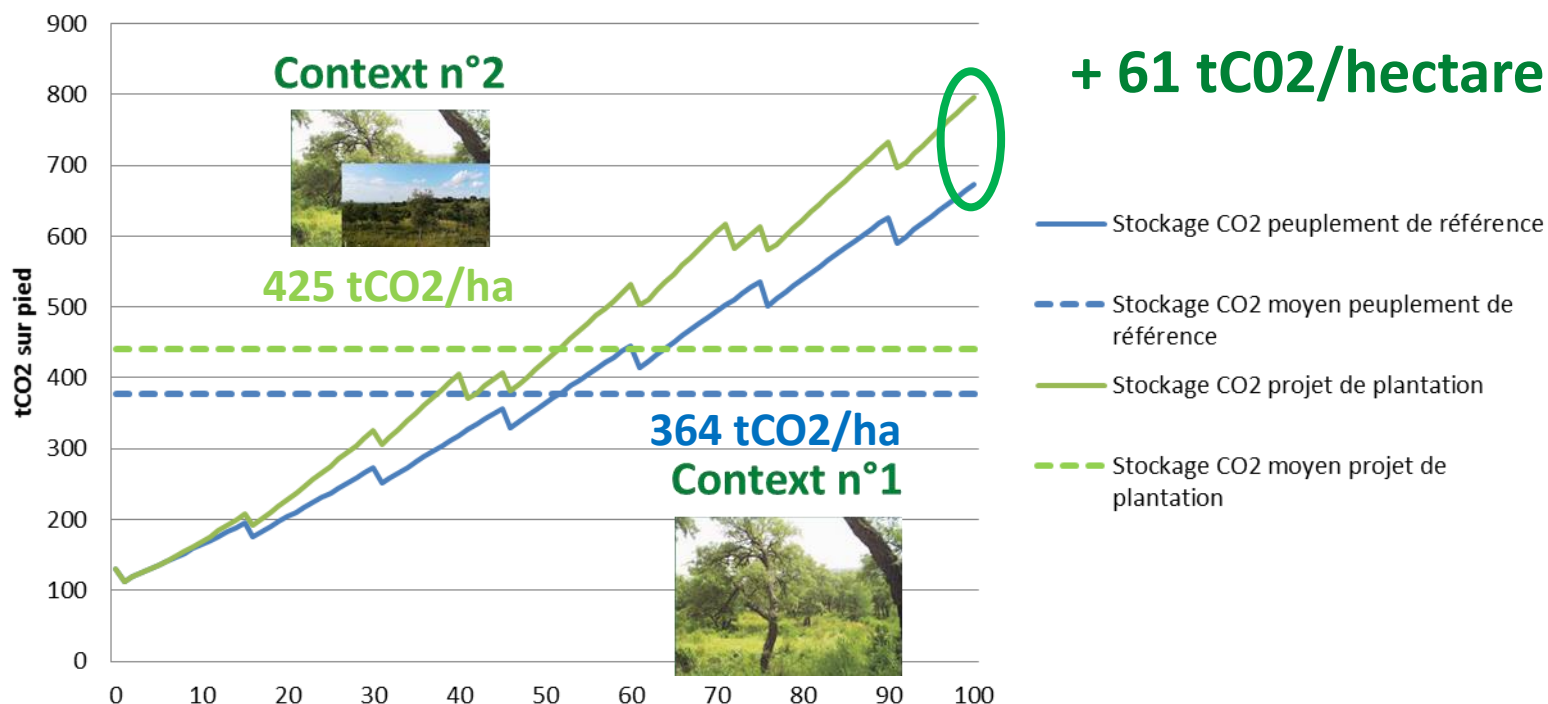
2 years

Cork's storage



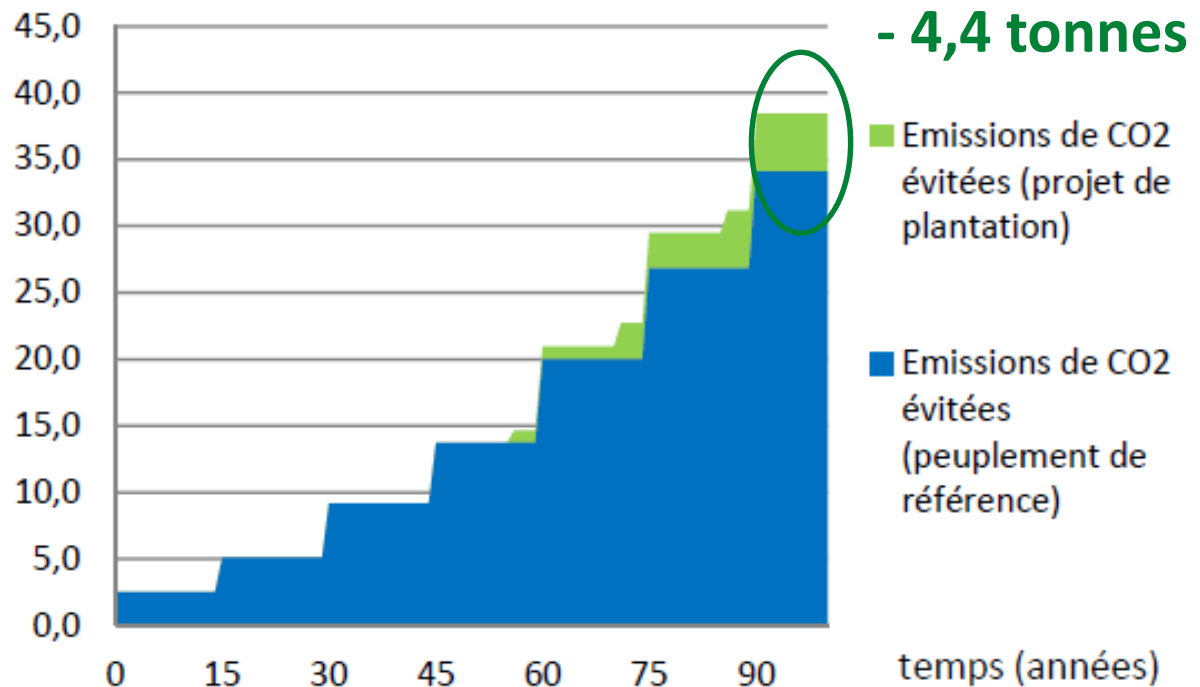
Results for the estimation of the Carbon Balance

SEQUESTRATION



Results for the estimation of the Carbon Balance

CORK SUBSTITUTION



- 4,4 tonnes CO2/hectare

■ Emissions de CO2 évitées (projet de plantation)

■ Emissions de CO2 évitées (peuplement de référence)

Context n°2



Context n°1





-6,4 tonnes CO2/hectare

WOOD SUBSTITUTION - 2 tonnes CO2/hectare

Results for the estimation of the Carbon Balance

STORAGE

Tonne CO2/hectare	Cork storage	Wood storage
Context n°1 	1,4	0
Context n°2 	1,6	0,6

Estimation of the economic balance sheet (100 years)

Context n°1





Context n°2



– 13 000 €

Estimation of the Carbon Balance

	Context n°1	Context n°2
Capture (tCO ₂ /ha)		
SEQUESTRATION	364	425
STORAGE	1,4	2,2
SUBSTITUTION	34	40,4
TOTAL	399,4	467,6

+ 68,2 tCO₂

13 000 € / 68,2
=

191 € tCO₂

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15 – 30 € tCO₂

Study Limits

- Growth models (individual models) don't take into account **competition between trees**
- **Tree mortality** over the 100 years cycle is not taken into account
- Difficulties in estimating the **fertility index** of forest stands

Perspectives for model improvement

- Integrate the **fire risk**
- Take into account the carbon storage of the **scrubland and soil**
- **Integrate** a cork oak itinerary into the **Label Bas Carbone**

Promote other ecosystem services to manage cork oak forests

Public reception



Landscape quality



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15-30 € tCO2

CO₂

? €

? €

Soil protection



? €

To manage the cork oak forest
(ASL Suberaie varoise)

191 € tCO2

Local jobs



? €



Thank you for your attention

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