



PROGRAMME DE RECHERCHE
**CARBONE ET ÉCOSYSTÈMES
CONTINENTAUX**

PEPR FairCarboN studies the contribution of continental ecosystems to reducing GHG emissions and absorbing atmospheric CO₂



FairCarboN in figures

2 pilot institutions CNRS & INRAE

Budget of **40 M€** over **6 years** 2022-2028

3 committees : academic partners, stakeholders, international scientists

16 projects funded including **5 Targeted Projects** and **11 projects** selected through **2 calls for proposals** (2023-2024)

Implication of **+100 research units**, **+50 academic partners**

+150 investigated sites in mainland France, overseas and abroad

1 animation team (17 people) organizing :

- Supports for international mobility (**14 funded** in 2024) and scientific events (**9 events in 2023-2024**)

- Thematic events for scientists and general public



Objectives of the program

1

Overcoming knowledge gaps on the key processes governing the carbon cycle in the context of global change



Make available a new generation of models simulating ecosystem carbon stock evolutions evaluated on an open database

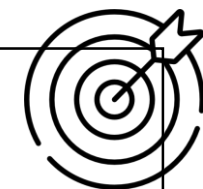
2

3

Co-construct, evaluate and support the implementation, in cooperation with stakeholders, of transition scenarios that meet the challenges of climate neutrality



Structure of FairCarboN



**Calls for proposals 2023-2024 : 4 axes
11 projects**

Budget : 15 M€

**Axis 1
Land-sea Continuum**

**Axis 3
Biomass production
and use**

**Axe 2
Coupling of
biogeochemical cycles
(C,N, P, H₂O)**

**Axis 4
Economic and social
issues, drivers and impacts
of change**



5 targeted projects

**PC1 - ALAMOD
Open databases and shared
numerical models**

Budget : 7 M€

**PC3, PC4 & PC5
Support for equipments
and infrastructures
Flux towers
Network of cultivation
systems experiments
Land-sea continuum
(mainland France, overseas
and southern countries)**

**PC2 - SLAM-B
Trajectories of change in
territories and *scenario labs***

Budget : 6.5 M€

Budget : 6.3 M€

Gouvernance : Direction, coordination and program animation

Budget : 5.2 M€



FairCarbon
Le carbone dans les écosystèmes continentaux :
leviers et trajectoires pour la neutralité carbone



anr



INRAE



PROGRAMME
DE RECHERCHE
CARBONE ET
ÉCOSYSTÈMES
CONTINENTAUX



Institut de Recherche
pour le Développement
FRANCE



INSTITUT NATIONAL
DE L'INFORMATION
GÉOGRAPHIQUE
ET FORESTIÈRE



ifp Energies
nouvelles



SORBONNE
UNIVERSITÉ



UNIVERSITÉ PARIS-SACLAY



UNIVERSITÉ
DE REIMS
CHAMPAGNE-ARDENNE



Office National des Forêts



AgroparisTech

UNIVERSITÉ
PARIS-SACLAY

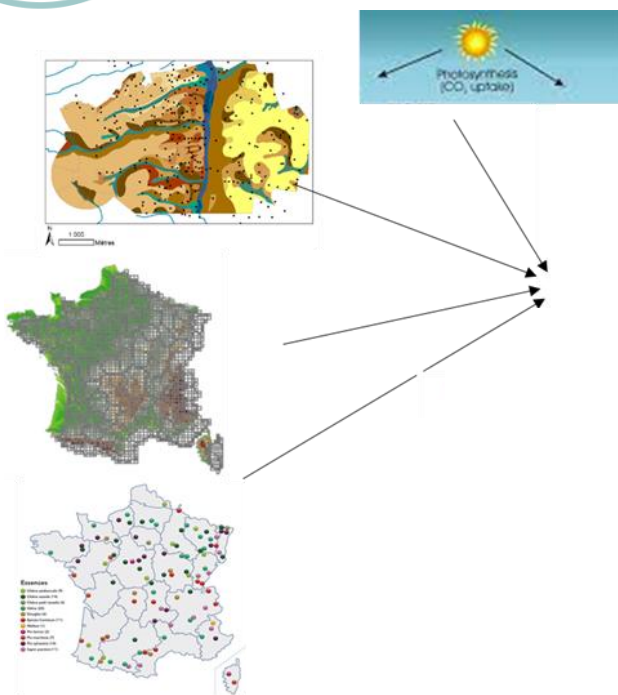


FRANCE

PROGRAMME
DE RECHERCHE
CARBONE ET
ÉCOSYSTÈMES
CONTINENTAUX

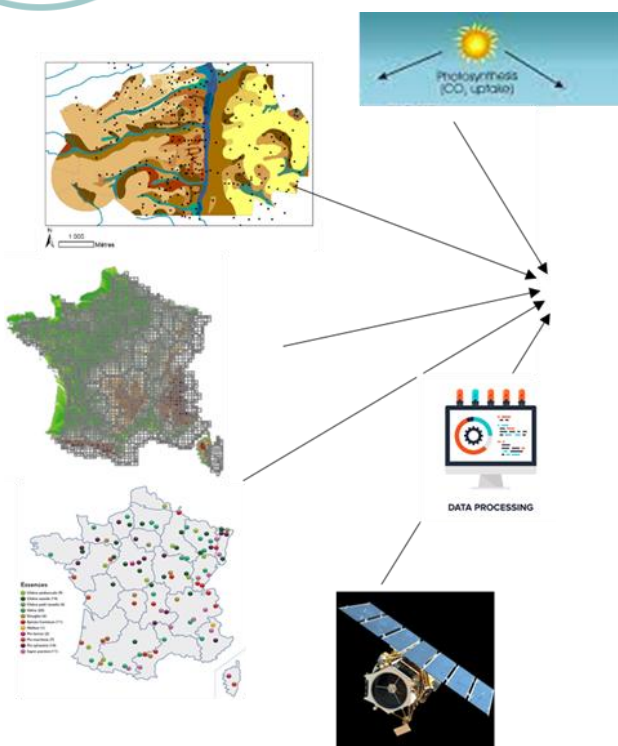
12/05/2026

Objectives of the ALAMOD project



WP1 Identify and clean up datasets characterising soil and biomass carbon stocks in temperate and tropical ecosystems

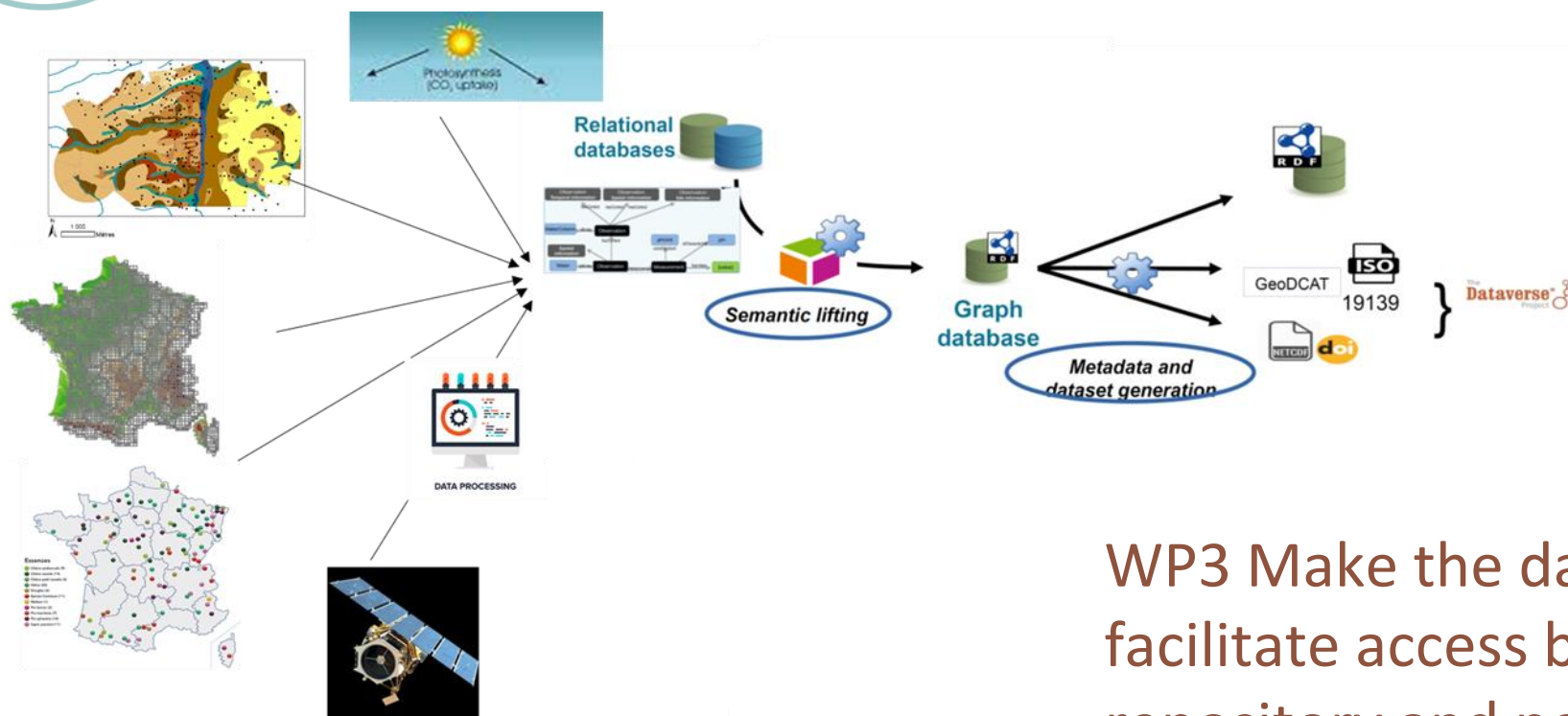
Objectives of the ALAMOD project



WP1 Identify and clean up datasets characterising soil and biomass carbon stocks in temperate and tropical ecosystems

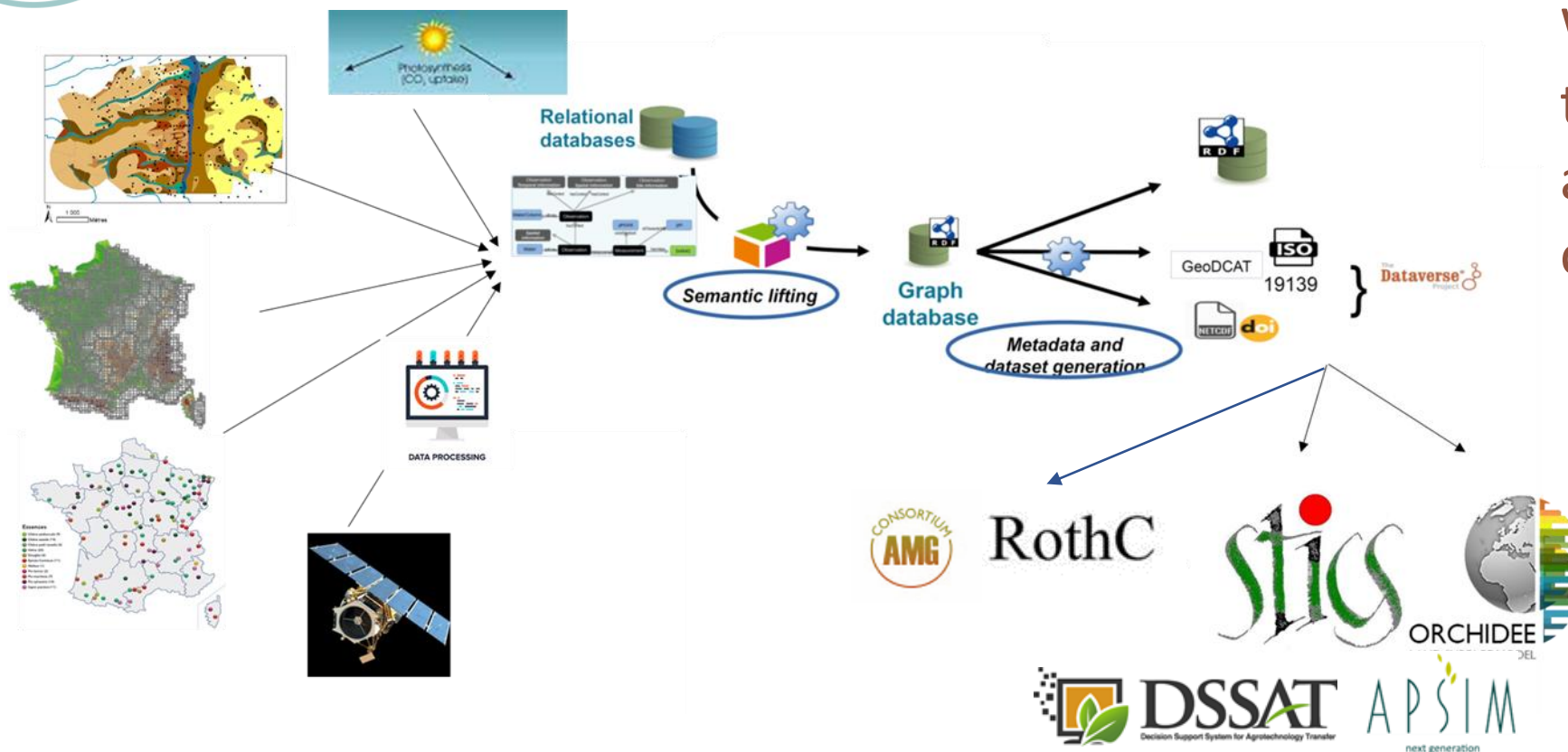
WP2 Develop innovative methods to fill gaps in these datasets : infrared spectroscopy, Rock-Eval analysis and satellite images

Objectives of the ALAMOD project



WP3 Make the datasets interoperable and facilitate access by constructing a data repository and portal

Objectives of the ALAMOD project



WP4 Use the datasets to compare, evaluate and improve models of carbon dynamics

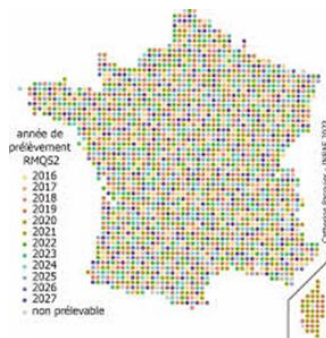
Of interest to the STICS modelling community

WP1 Valuable and unique datasets



RMQS

~1000 agricultural sites with SOC stock and soil properties monitoring, 2nd campaign in progress



Temperate long-term experiments

167 treatments in 34 trials, including SOC stocks, soil properties, C inputs from crops and amendements, climate data
Fujisaki *et al.* 2026 Scientific data



OS²

10 km² cropland observatory with two SOC stocks campaigns (2008-2024) and N₂O measurements



Tropical long-term experiments

About 30 trials, including SOC stocks, soil properties, C inputs from crops and amendements, climate data



ICOS

~10 agricultural sites with C fluxes monitoring + meteorological and ancillary data

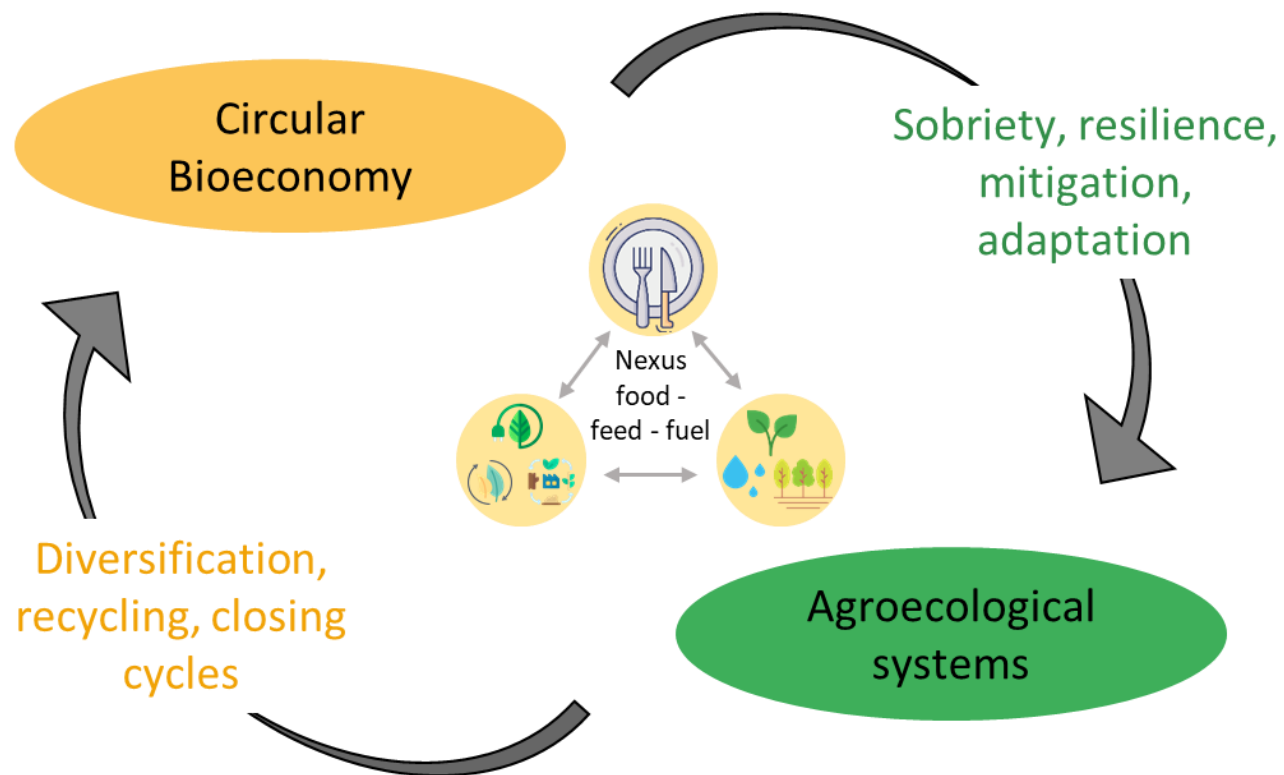


French N₂O dataset

N₂O measurements carried out using static and automated chambers, crop management, soil properties, climate data



SLAM-B (Scenario Labs and Integrated assessment and Modeling for Bioeconomy Development)



SLAM-B in brief :

2nd targeted project of FairCarboN

Workforce

- ≈ 42 French research labs
- 100 scientists
- 32 PhD, Post-Docs and Engineers
- 6.5 M€



SLAM-B

Development of an **integrated territorial modelling** assessment platform

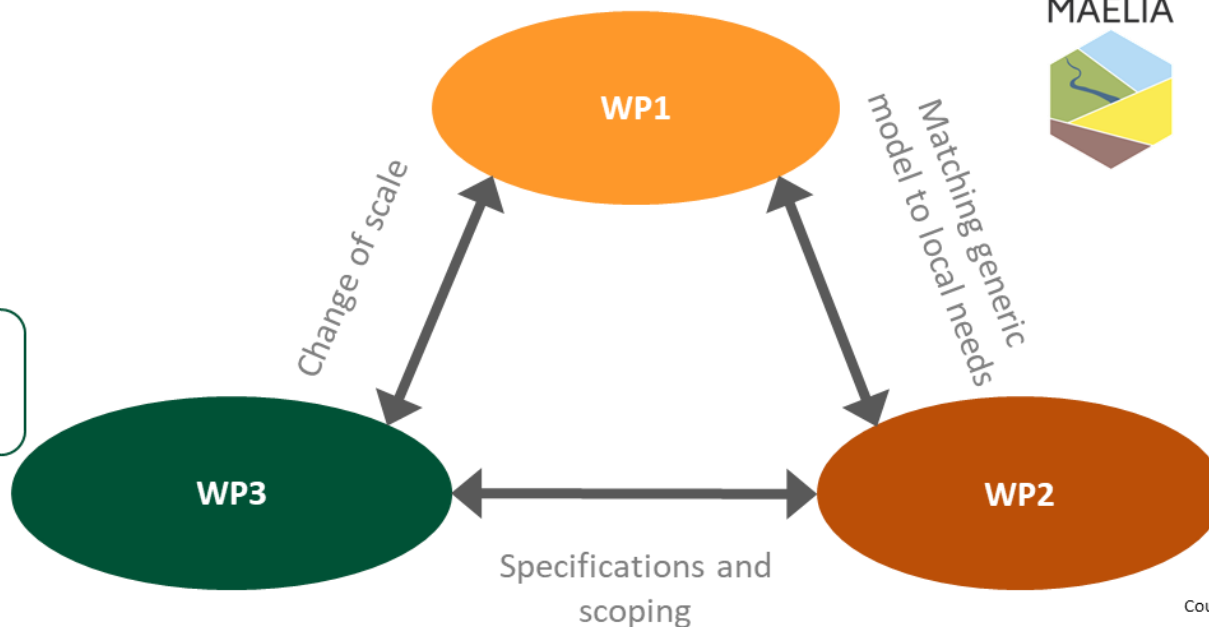
Expanding MAELIA functionalities



Integration with other models (i.e. **STICS**, Capsim, Herbsim, ...) and LCA

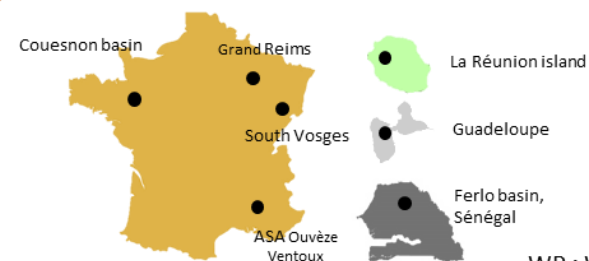
Knowledge of bioeconomy scenarios in France and Europe

Assessing the sustainability of large-scale bioeconomy scenarios, **Including European-scale simulation with STICS to estimate production potential of cover crops**



Proof of concept: **Territorial bioeconomy scenario labs**

Assessing scenarios using MAELIA in contrasted contexts



WP : Working Packages





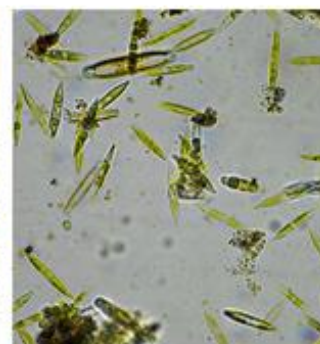
Let's keep in touch

- Discover our **website** : <https://www.pepr-faircarbon.fr/>
- Suscribe to our **newsletter** : subscription link on our home page
- An idea for a **workshop** ? An **international mobility project** ? Forms are available on the website
- FairCarboN international congress at Montpellier (28-31/08/2028)
- For any question : perrine.franquet@pepr-faircarbon.fr

In the meantime, the FairCarboN program wishes you an excellent meeting !



PROGRAMME
DE RECHERCHE
**CARBONE ET
ÉCOSYSTÈMES
CONTINENTAUX**




**RÉPUBLIQUE
FRANÇAISE**
*Liberté
Égalité
Fraternité*



anr®



INRAE

