RÉPUBLIQUE FRANÇAISE
Liberté
Égalité
Fraternité

FRANCE 2030

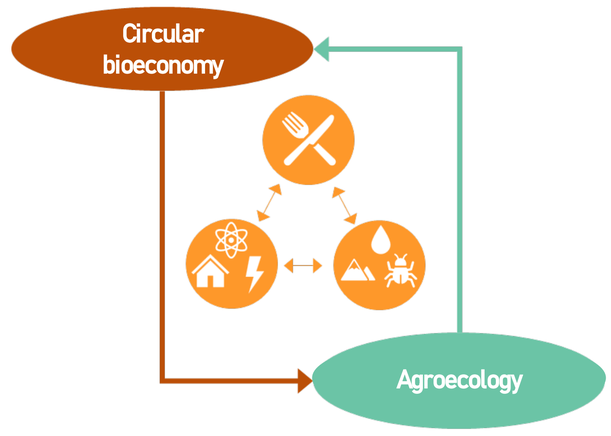
PROGRAMME DE RECHERCHE
CARBONE ET ÉCOSYSTÈMES CONTINENTAUX

SLAM-B
FairCarboN

Scenario Labs and Integrated Assessment and Modelling for Bioeconomy Development

OBJECTIVES

- → **Design and assess green circular bioeconomy scenarios** to achieve carbon neutrality by 2050, adapted to climate change and meeting the challenges of the *Food and Non Food productions and Natural Resources conservation*
- → **Develop Integrated Assessment and Modelling** (IAM) approaches applied in "**scenario labs**" and at French and European levels
- → **Produce tailor-made knowledge for public decision-makers** at local, national and European level



WORK PACKAGES

MAELIA

1-Development of an integrated territorial modeling and assessment platform

Scale change

Matching generic model to local needs

3- French and European bioeconomy scenarios

Specifications and framework

2- Territorial bioeconomy scenario labs

1- territorial IAM

Develop generic IAM approaches to enable **local stakeholders to design scenarios towards carbon neutrality** via the development of a territorialized circular green bioeconomy

➔ **New functionalities in the MAELIA platform for**:
- **simulation of a very wide range of agricultural** (crops and livestock) and **forestry** systems, as well as **biorefineries** (environmental, bio-based materials, etc.),
- spatio-temporal optimization of **biomass chains organization**
- **Assessment of socioeconomic of biomass chain's performances**
- **Spatialized Life Cycle Analysis**
- Assessment of **planetary boundaries**...

2- Scenario labs

Proof of concept of the IAM approaches (WP1) via their application in a range of **contrasting territories and transdisciplinary devices**

➔ **Seven contrasted Scenario Labs** :
- Zone Atelier Armorique (Landscapes, ecosystem processes)
- Vosges (Forestry, agriculture and tourism territories)
- Nord-Vaucluse (Orchards and water deficiency)
- Grand Reims (Multiple sectors and urban bioeconomy)
- Reunion Island (Livestock systems, cycle closure on an island)
- Northern Senegal (agro-sylvo-pastoral systems)
- Guadeloupe (Interactions between biomass sectors)

3- France - Europe

Scenarios of bioeconomy at national and European scales for public decision-makers

➔ **Knowledge for public decision-makers** on :
- **Potential production of cover crops, crop residues, biogas** and maintenance of soil carbon stocks in Europe
- **Sustainable ecological intensification scenarios for agriculture**
- **Energy efficiency** of agricultural systems in embedded in bioeconomy
- **Forest management wood value chain scenarios**

It will also enable the development of a **MAELIA across France**.

KEY POINTS

5 years (2023-2028)

90 scientists

40 recruitments

37 labs

6,5 M€

7 Scenario labs

Coordination : Olivier Therond, Lorie Hamelin and Bernard Kurek
Project manager: Arthur Lenoir
Laboratories: UMMISCO, IRIT, MIAT, LAE, ITAP, SAS, BioWooEB, TBI, IATE, I2M, OPAALE, LBE, SELMET, PEGASE, MoSAR, AGIR, ENSIACET, LIRMM, AMAP, BEF, FARE, LESSEM, LISC, SILVA, IODE, BAGAP, CEDETE, EMMAH, Recyclage & Risques, Tetis, Aïda, IRD-UCAD, LIED, LG-ENS, LEESU, iEES, BETA

www.slamb.fr