



# FairCarbon

Carbon in continental ecosystems: levers and pathways for carbon neutrality



# What is the FairCarboN PEPR?

- **PEPR** : Program to improve French research skills and infrastructure in a priority area
- **FairCarboN** is chaired by Sylvie Recous (INRAE) and Pierre Barré (CNRS) to the benefit of the whole community interested in C in continental ecosystems.
- The program was funded in the first wave of the PEPR call for proposals for **6 years with a budget of 40 M€**

# The pitch

To better assess and predict the possible contribution of continental ecosystems to climate neutrality we lack :

- Understanding on key processes governing the carbon cycle, and their responses to global change
- Data
- Validated models that can simulate the evolution of carbon sinks and fluxes in continental ecosystems
- Methods to involve stakeholders

# The pitch

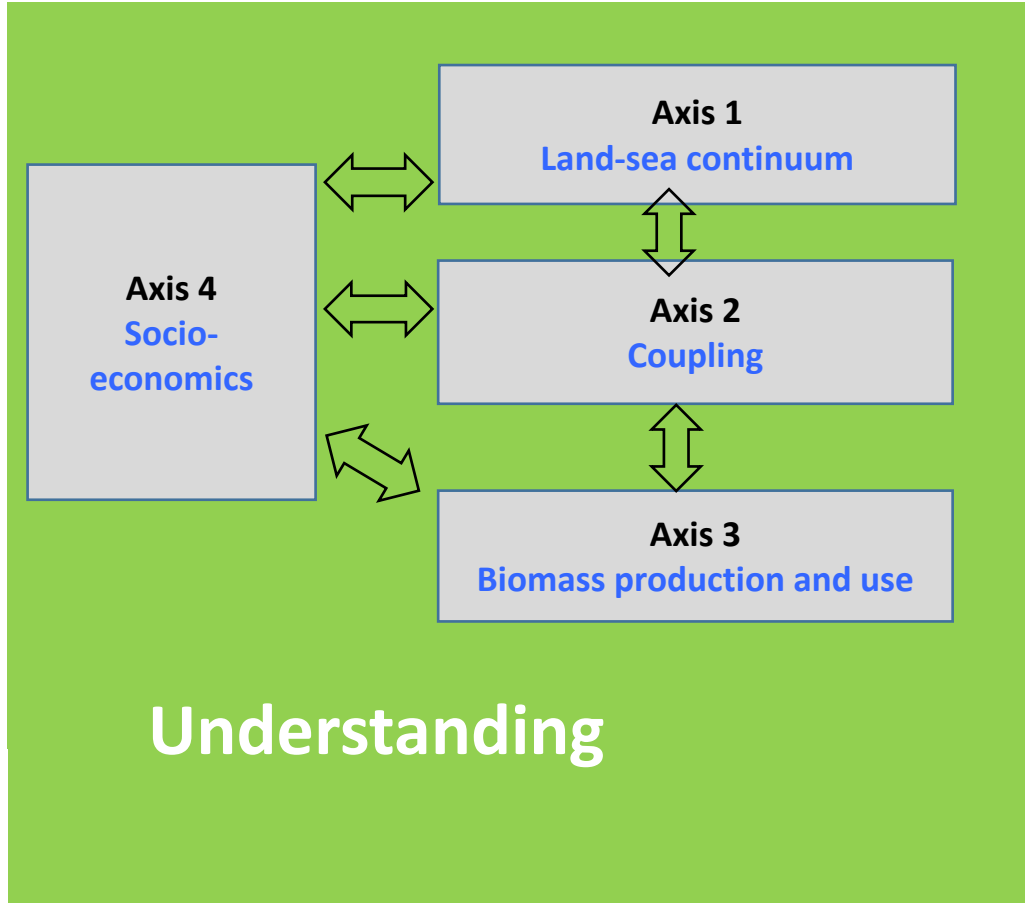
To better assess and predict the possible contribution of continental ecosystems to climate neutrality we lack :

- Understanding on key processes governing the carbon cycle, and their responses to global change
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- Improved methods to involve stakeholders

Call for proposals

Targeted projects

# Call for proposals related to key processes



Call for proposals : bottom-up



Key processes governing carbon transfer and storage along the land-sea continuum

Coupling of biogeochemical cycles in the context of global change



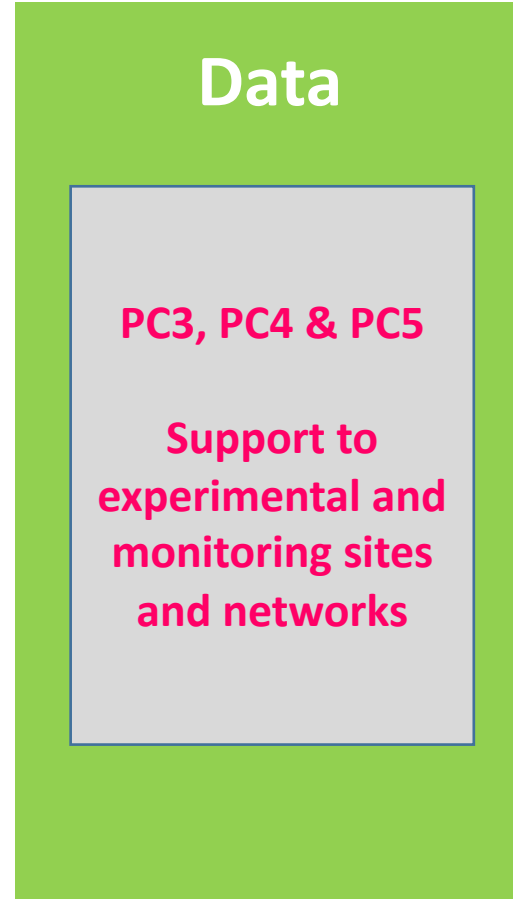
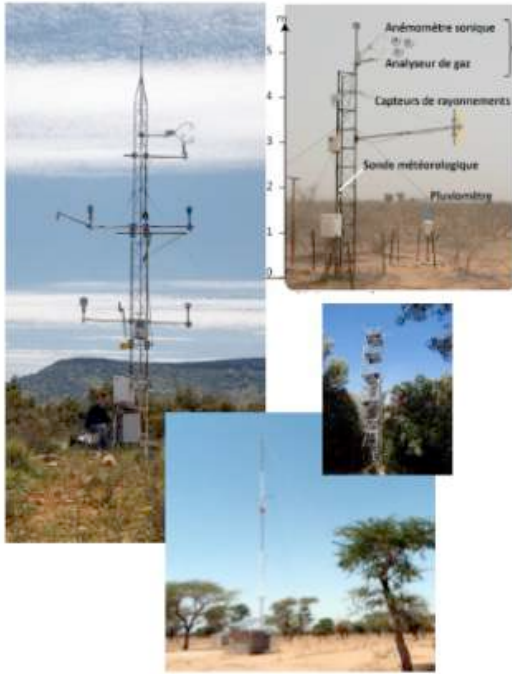
Expansion of plant biomass production and biomass use



Economics and social issues : drivers and impacts of change



# Targeted projects : support to infrastructures

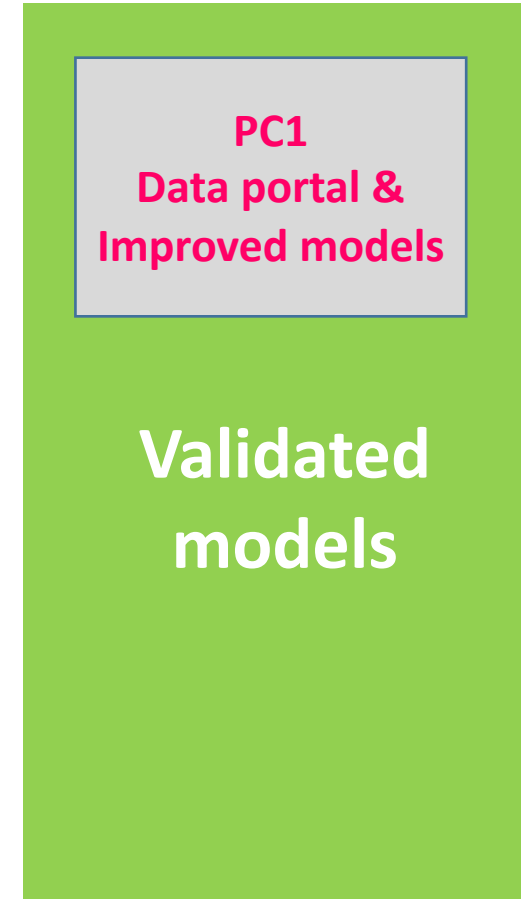


**Targeted support for existing research facilities and infrastructure** to strengthen and harmonize the monitoring of continental ecosystems

Targeted projects (PC)

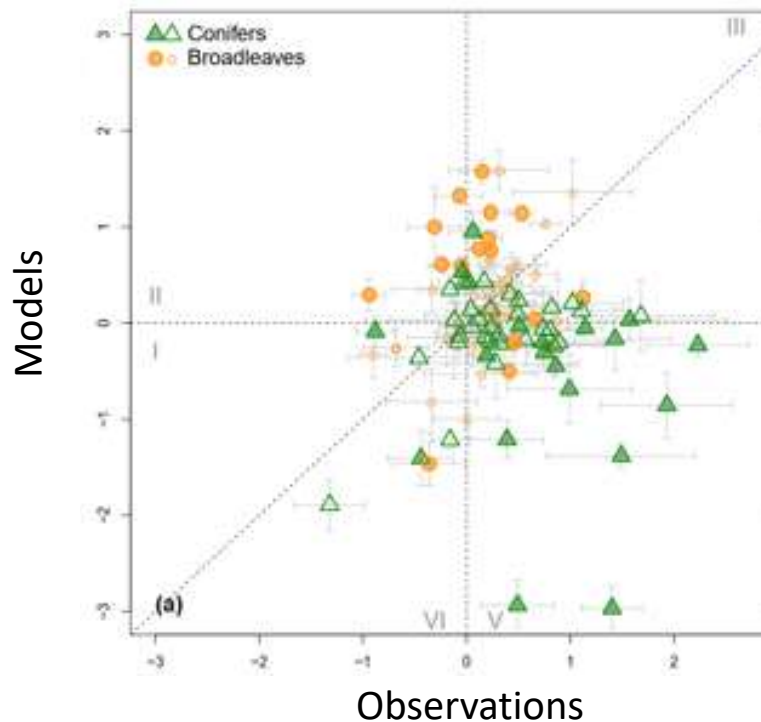
# Targeted project : towards models validated on stocks

- Few models validated on C stock evolution in ecosystems because of the lack of data



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- Few models validated on C stock evolution in ecosystems because of the lack of data
- When the data exist...



SOC stock evolution in 15 years in French forest soils ( $\text{tC ha}^{-1} \text{yr}^{-1}$ )  
Mao et al. 2019

PC1  
Data portal &  
Improved models

Validated  
models

Targeted projects (PC)



# Targeted project : towards models validated on stocks

=> **create an unprecedented database** on the evolution of carbon stocks in soil and plant biomass, by capitalising on French research infrastructure and monitoring networks and **foster the creation of a new generation of models** that are able to simulate carbon changes in continental ecosystems

PC1  
Data portal &  
Improved models

Validated  
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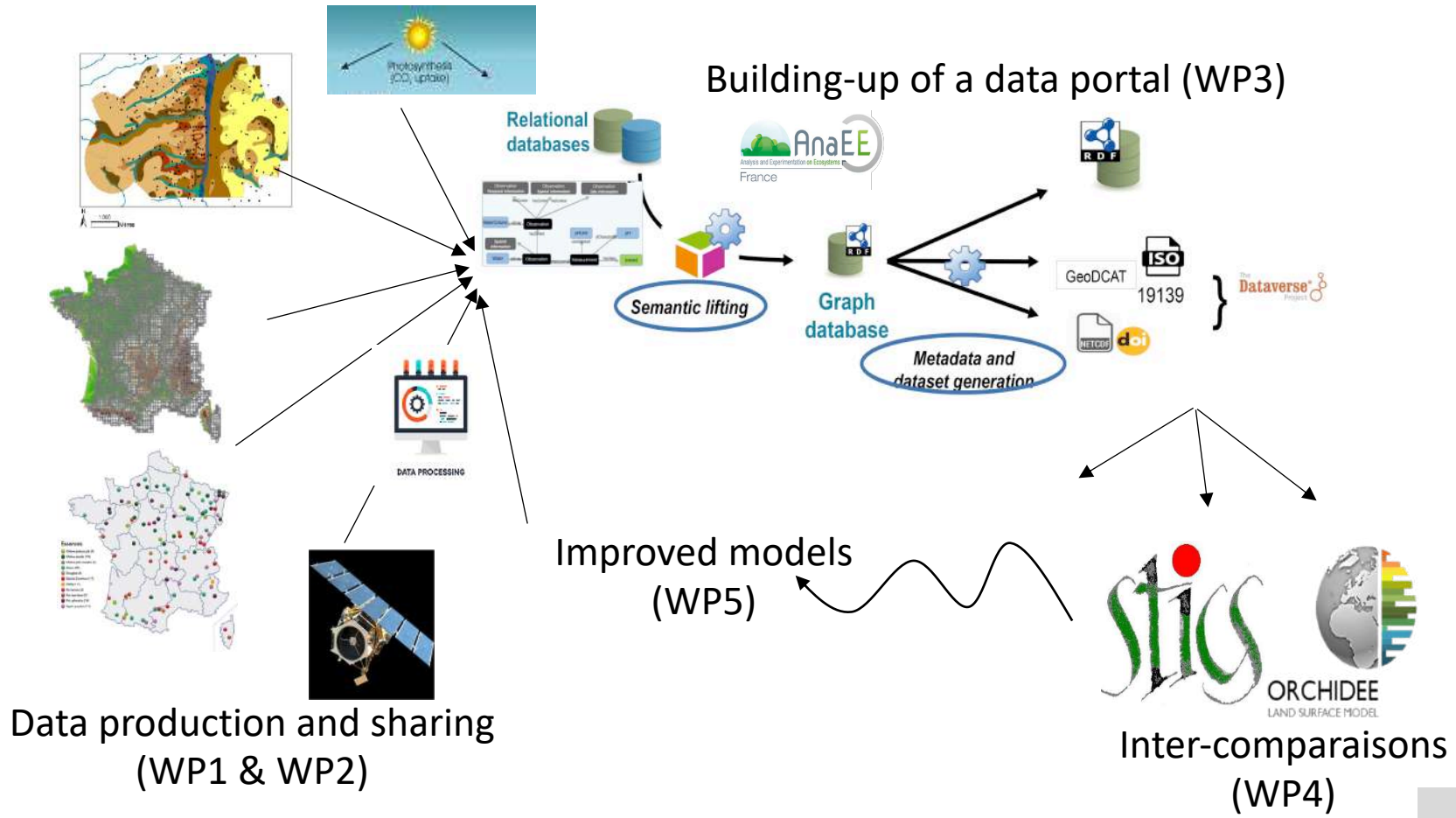
ICOS

Integrated  
Carbon  
Observation  
System



Targeted projects (PC)

# Targeted project : towards models validated on stocks

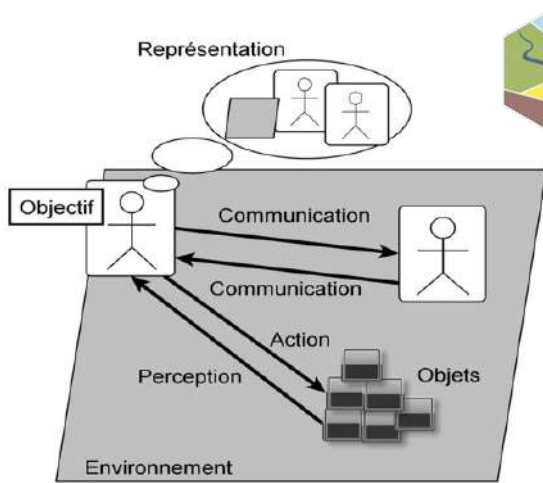


**PC1**  
**Data portal & Improved models**

**Validated models**

**Targeted projects (PC)**

# Targeted project : scenario labs



## MAELIA

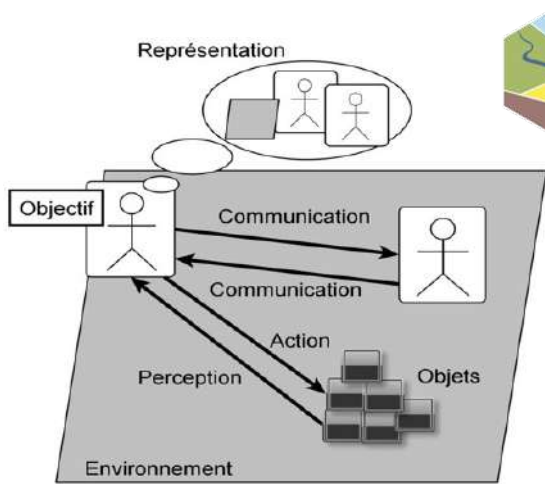
=> **Strengthening of the Maelia platform, integrated assessment and modelling**

**PC2  
IAM  
developpement  
and *scenario labs***

**Methods to  
involve  
stakeholders**

**Targeted projects (PC)**

# Targeted project : scenario labs



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PC2  
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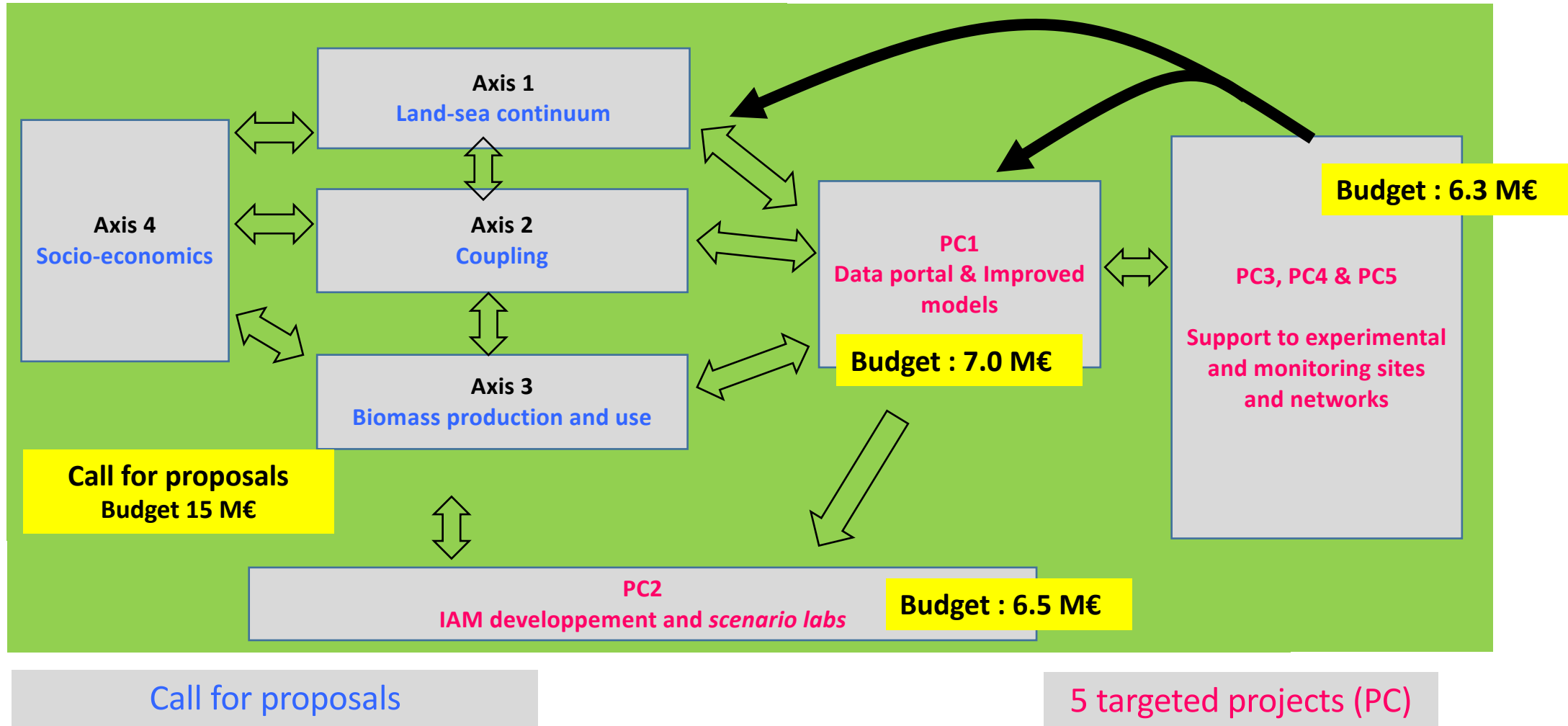
=> Use of Maelia to **build and evaluate scenario in collaboration with stakeholders**

Scenario labs



Targeted projects (PC)

# FairCarboN organization and funding



# Possible collaboration with C-land and beyond



**CLand**

To be done



Thank you for your attention

