

# The SoCa project

Beyond climate, **Soil Carbon**  
sequestration to sustain  
tropical family farming

**A 3-yrs project (2017-2020)**

**A 707 k€ grant of the Climate Initiative**



**FONDATION  
BNP PARIBAS**

**coordinated by L. Lardy**





Montpellier 29th & 30th June 2017 – 2nd CONSORTIUM of MEMBERS

## The SoCa Project

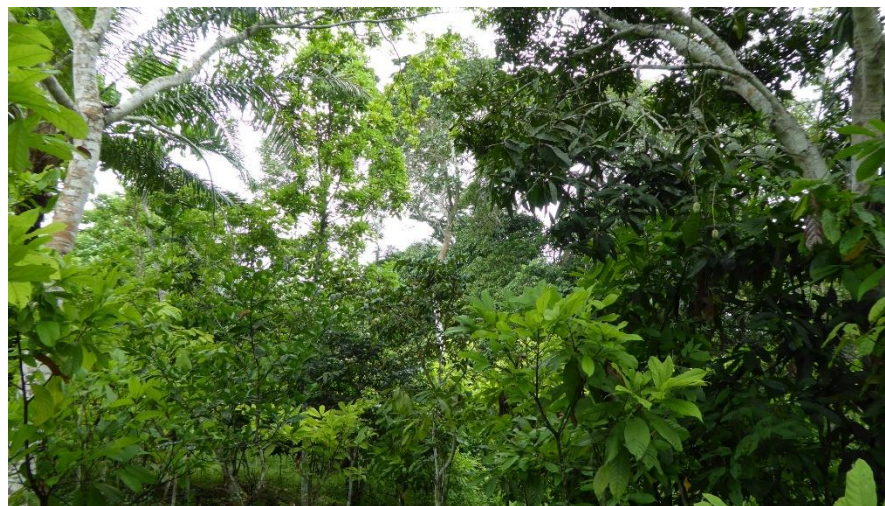


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*Beyond climate, **Soil Carbon**  
sequestration to sustain tropical  
family farming*



*Case studies,  
from  
multispecies  
to multistrata  
agrosystems*



Diversified cacao-based agroforestry systems at Bokito, Cameroon  
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**Overall objective**

to significantly **improve  
the understanding** of soil  
organic carbon (SOC)  
sequestration in tropical  
smallholder agriculture





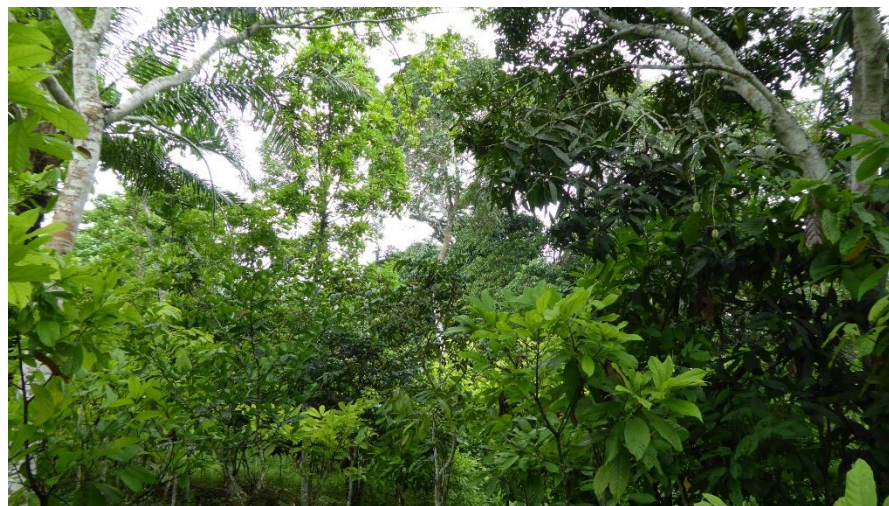
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**Overall objective**

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francois.tremege@ird.frof  
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smallholder agriculture

**Climate Change  
Mitigation and  
Adaptation**

**Co-benefits**

**Primary  
Production**

*Promoting the well-being of smallholders  
and the environmental sustainability of  
cropping systems*







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## The SoCa Project



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*Partnership*  
**& in-country case-study**



## The SoCa Project



FONDATION  
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*Partnership*  
& in-country case-study



*Benin*

**Oil palm-based  
Cultivated systems**



*Cameroon*



**Diversified cacao-based  
agroforestry systems**



*Ivory Coast*

**Cocoa-fruit trees intercropping**



*Madagascar*

**From mixed cereal-legume to  
intercropping with trees**



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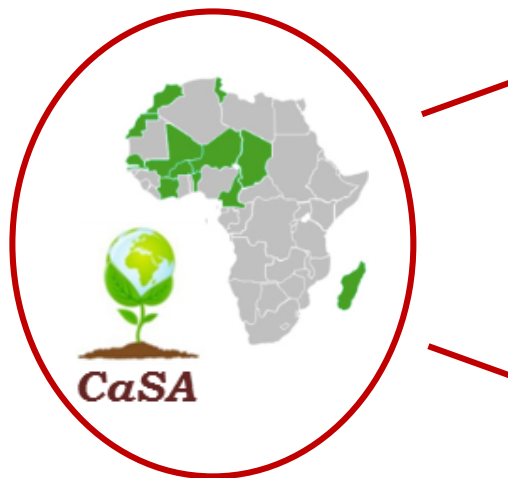
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*Benin*



**Oil palm-based  
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**Diversified cacao-based  
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PCP Agroforesterie  
Cameroun



**World  
Agroforestry  
Centre**



**IITA** *Research in Nourish Africa*  
International Institute for  
Tropical Agriculture



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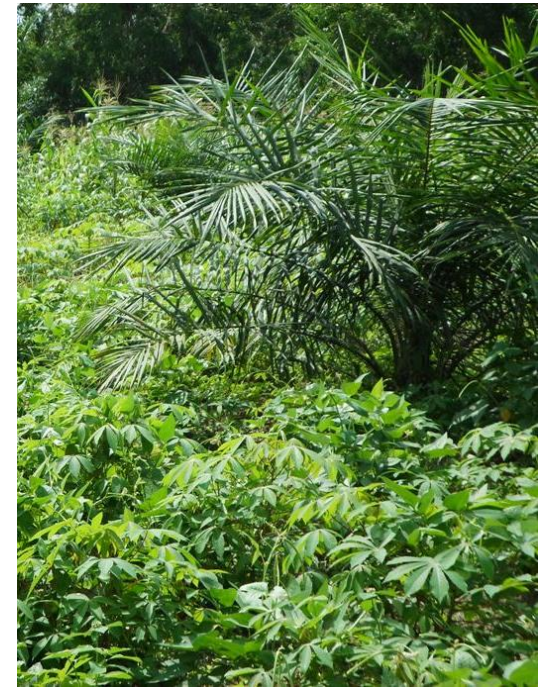


## The SoCa Project



### The challenges are to

- (i) to **better understand** how N & P availability in different soils, climatic conditions and cropping systems affect soil C sequestration; and propose biological indicators of it;
- (ii) to **support** farmers in improving and innovating their management practices for a triple win (food security, climate change mitigation and adaptation);
- (iii) to **inform** various audiences about environmental co-benefits of proper soil managements.



Oil-palm and cassava intercropping systems in Central Benin  
© H. Aholoukpé, 2017



## The SoCa Project



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*From  
multispecies to  
multistrata  
agrosystems*

*Constrasted  
pedo-climatic  
environments  
in the Humid  
Tropics*

***Climate Change  
Mitigation and  
Adaptation***

### Co-benefits

*Promoting the well-being of smallholders and  
the environmental sustainability of cropping  
systems*

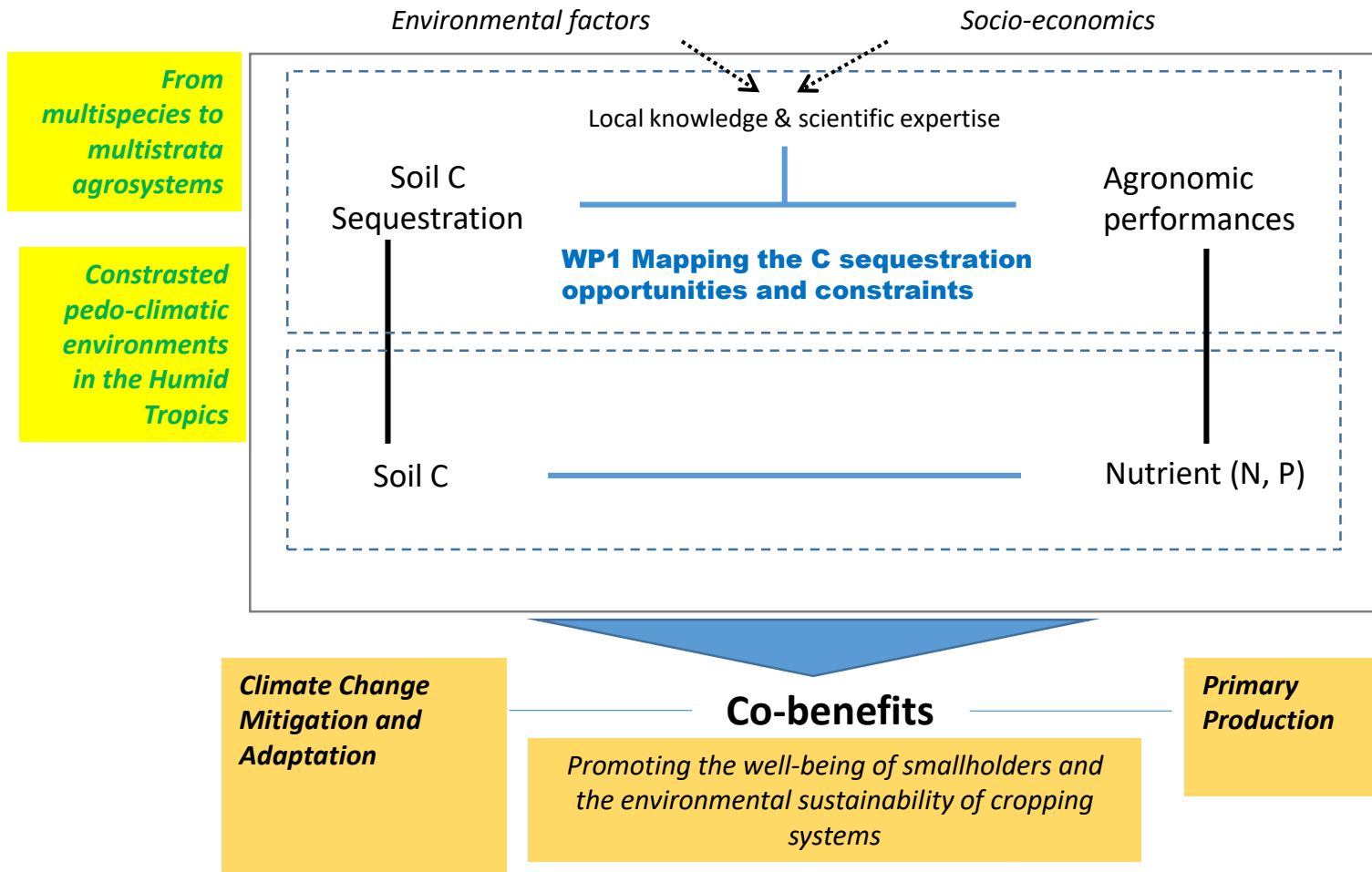
***Primary  
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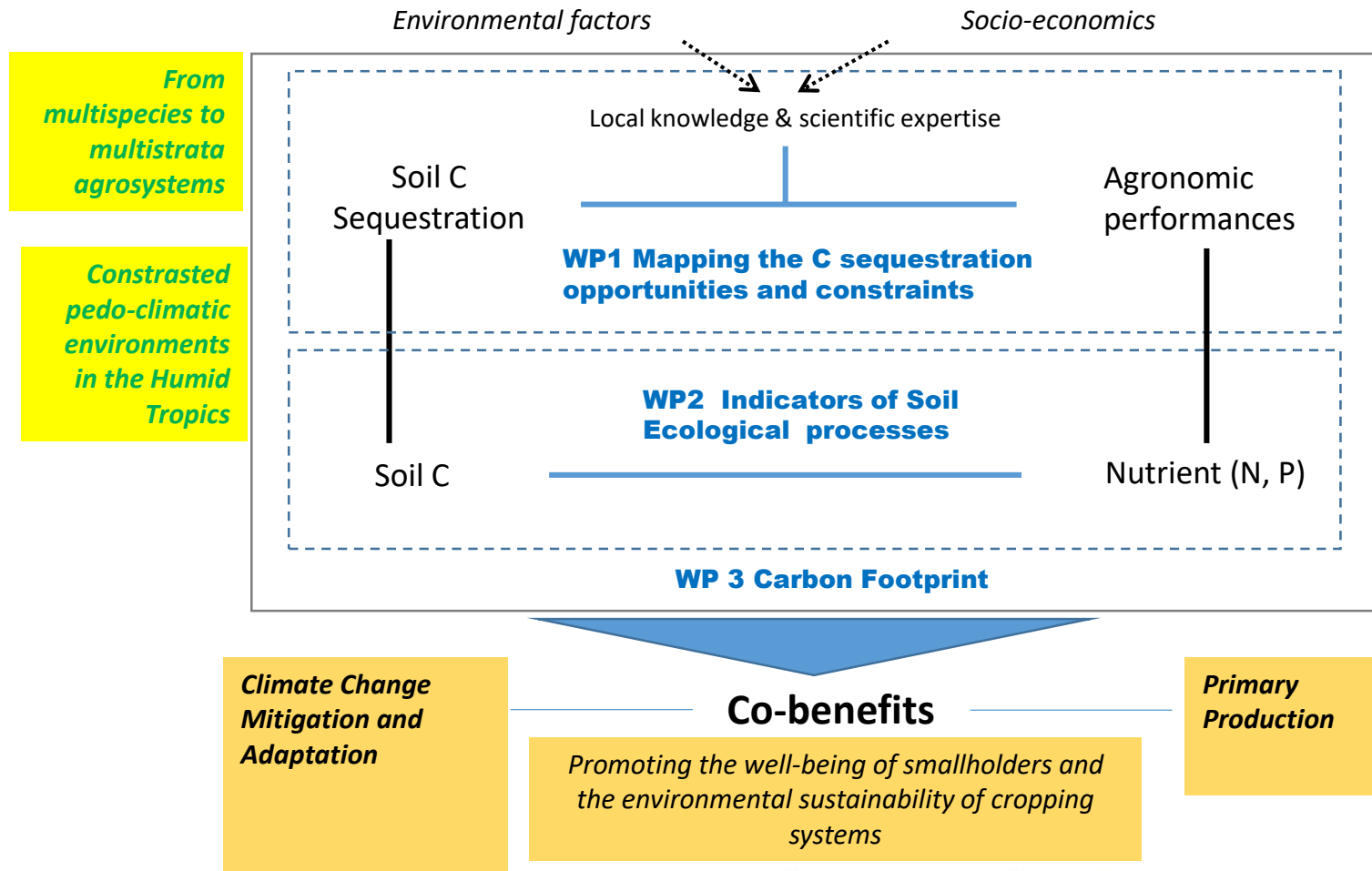




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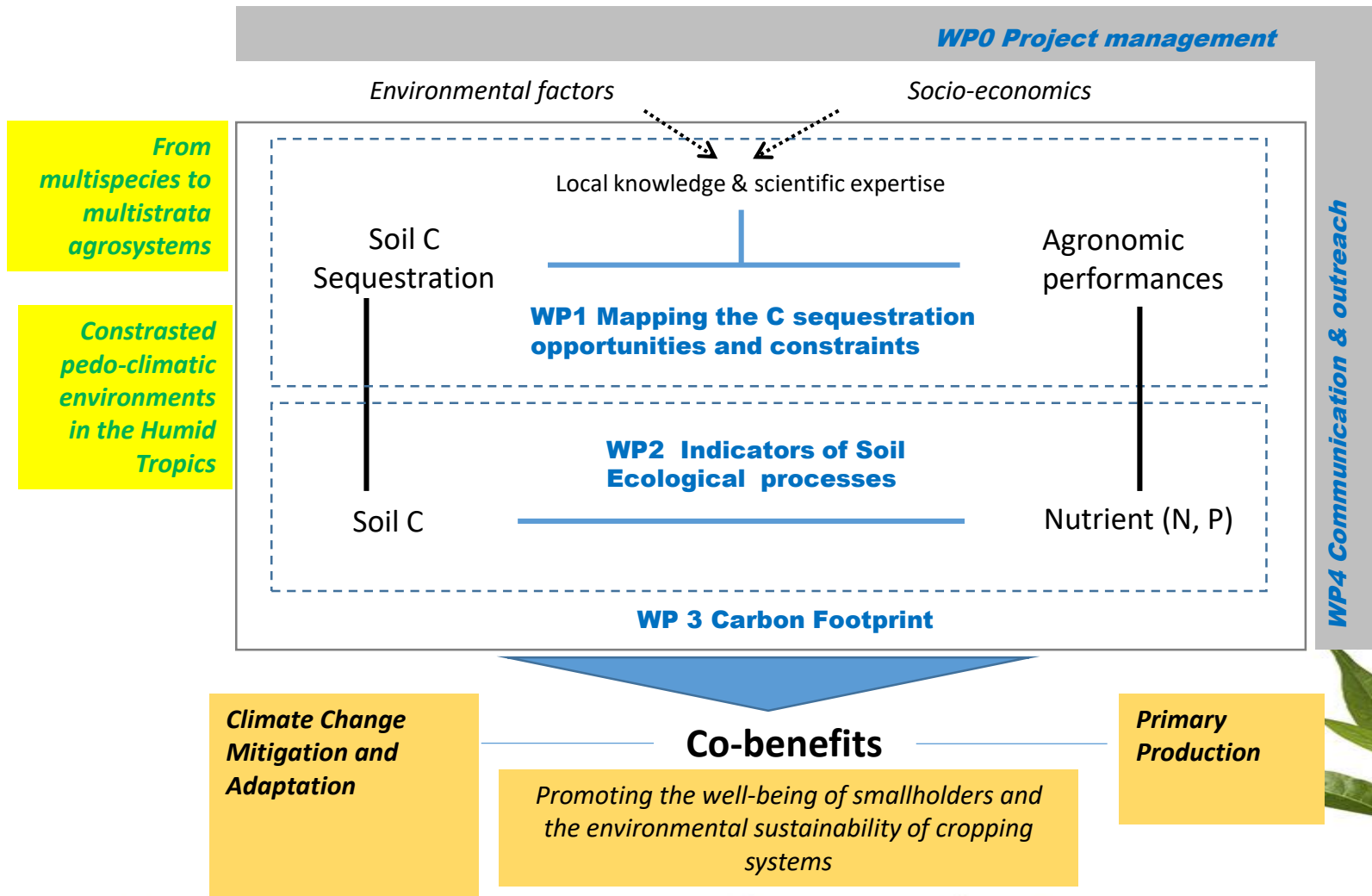
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## Contribution to research Pillars 1, 2 and 4



**Output series 1.** Assessment of the biophysical, social and economic contexts that drive farmer's decisions and impact soil C sequestration across scales. Knowledge on carbon sequestering practices and the conditions of their adoption for various farming systems in tropical family agriculture.

**Output series 2.** Science-based evidences on biophysical factors and ecological processes affecting soil C sequestration. Characterization of C, N, P stocks and fluxes in various agricultural systems and along climate gradients. Observations and experiments on soil functioning.

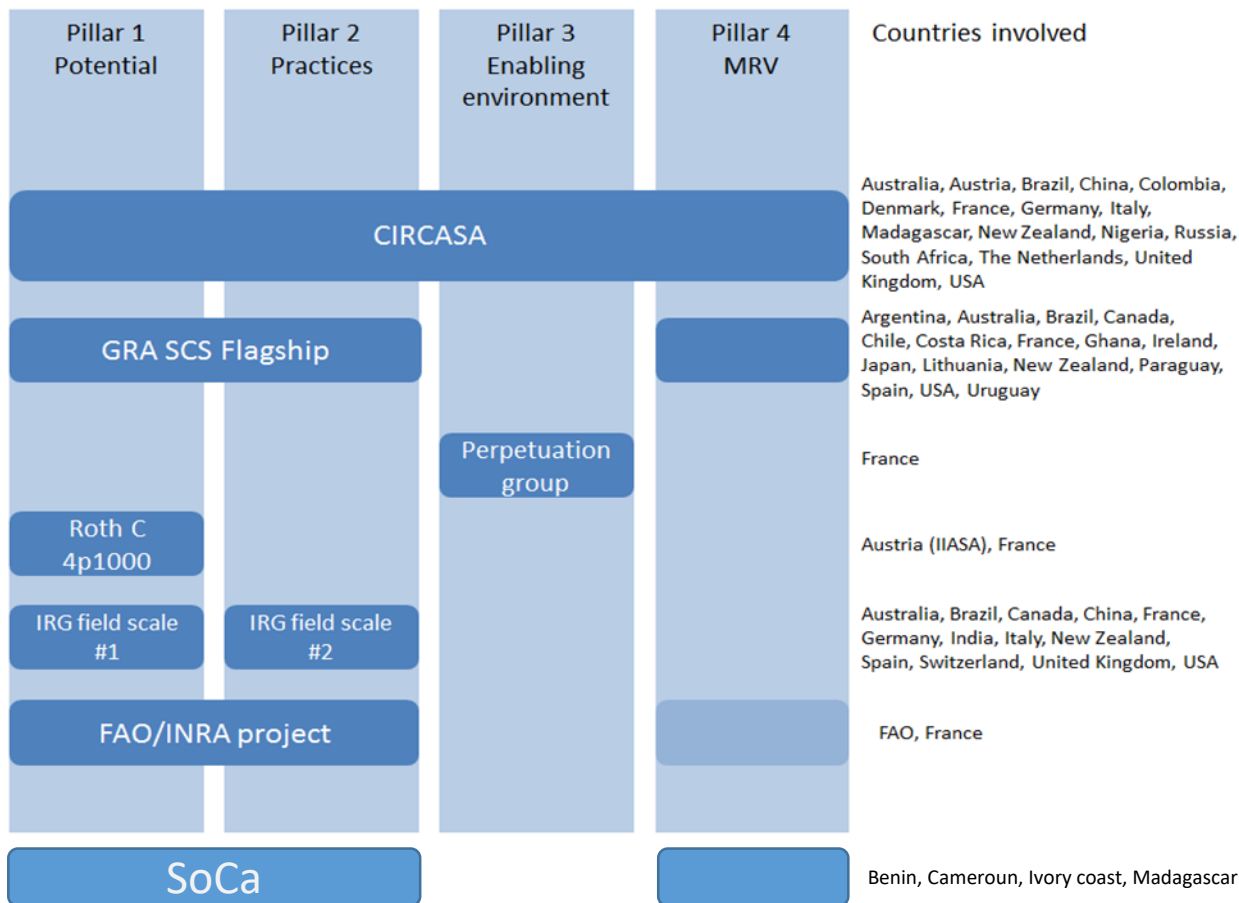
**Output series 3.** Ex-ante estimates of the C balance and footprint that reveal main GHG sink or source of alternative management options or future agricultural development projects. GHG emissions assessment in selected situations and derived site-specific emission factors. Local and national workshops.

**Output series 4.** Training local scientists on how to use a reliable and cost-effective analytical tool for soil organic carbon determination (IR spectroscopy). Student supervision. Postdoctoral researcher involvement. Disseminating information and educating on soil and the ecosystems services the soil can provide.

***Kick Off Next Week!***







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**Thank for your attention**

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