ASECAP

Sofyan Martin, CEO
s.martin@soil.is

Soil : a fundamental natural capital

Soil is one of the main reservoirs of organic carbon and biodiversity:

1 500 billion Tons of carbon, three times more than the atmosphere

6 billion Tons of additional CO2: this is the additional storage potential

25% Global biodiversity: it is one of the richest habitats in living species

Yet, 1000 billion hectares of land are degraded in the world

The soil is subject to multiple pressures: erosion, artificialization, urbanization...

75% Terrestrial environments are severely degraded by humans (IPBES)

38 billion € Cost of soil degradation per year in the European Union

20 % Soils are in good condition in France according to the National Observatory of Biodiversity

soil.is

Projects for soil carbon storage

Focus on agricultural and « natural » soils

CIRCASA

FACCEJPI

GLOBAL RESEARCH ALLIANCE ON AGRICULTURAL GREENHOUSE GASES

…But many constraints :

Ecological

- Natural balance in C-cycle
- No possibility of changing vegetation and/or soils

Economic

- First objective is biomass production
- High removal of C with harvest
- Need for economic return

egis GROUP

soil.is

What about highly disturbed and anthropized soils linked to infrastructures?

No natural constrains
No ecological constrains
=
Unexplored potential

- Linear infrastructures : + 3.0 – 4.7 million km by 2050
- Road development: + 271 000 km by 2050

(Analysis based on 136 countries for rail and 224 countries for roads)

egis GROUP

soil.is

Nature Based Solutions exist !

Catalogue of technical natural solutions

Soil Health Biotechnology Solutions


Mychorizal inoculation and symbiosis


Varietal selection (root phenotype)


Biostimulants and biopesticides


Phytoremediation and depollution

Circular economy


Composting of bio-waste


Biochar


Anaerobic digestates


Sediment recovery

Creation of ecosystems and green infrastructures


Planting hedges or trees


Green roofs and walls


Creation of urban parks, wetlands


Bioretention systems (vegetated drains, etc.)


De-im permeabilizatio n

Restoration and ecological management of degraded ecosystems


Reforestation


Restoration of degraded grasslands


Restoration of degraded soils


Restoration of degraded wetlands

Agroecology and regenerative agriculture


Agroforestry


Cover crops


Practices: reduced tillage, sowing under cover, rotations

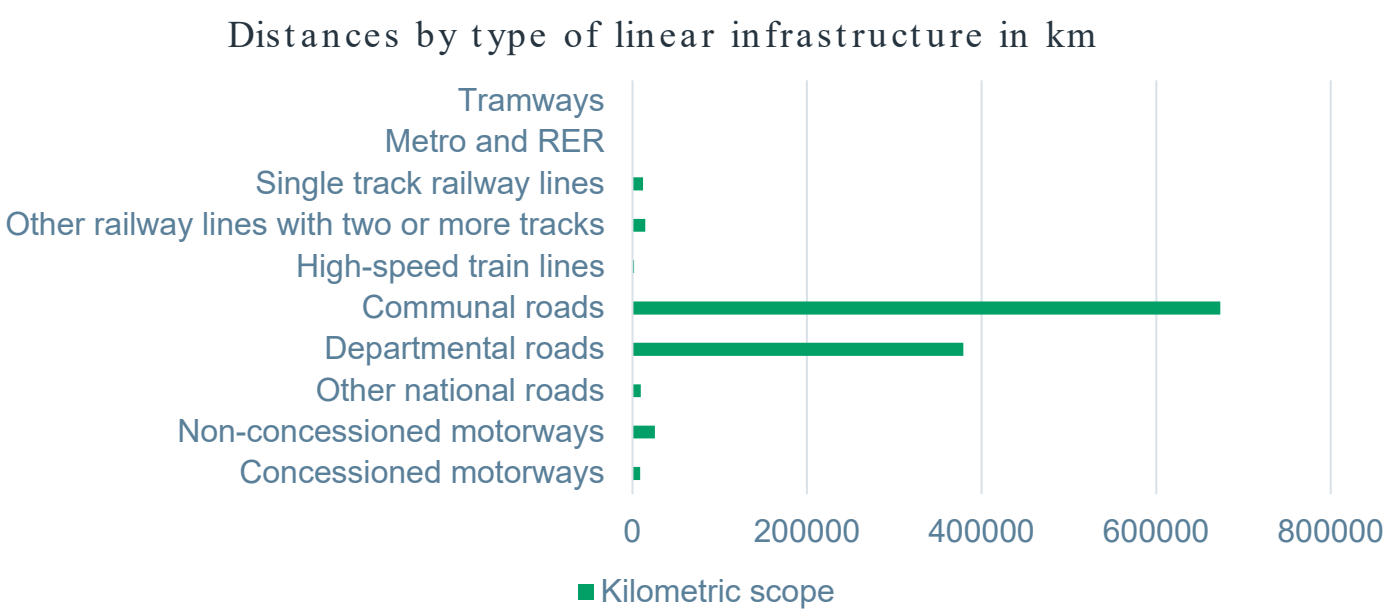

Natural amendment (manure, compost), crop residues

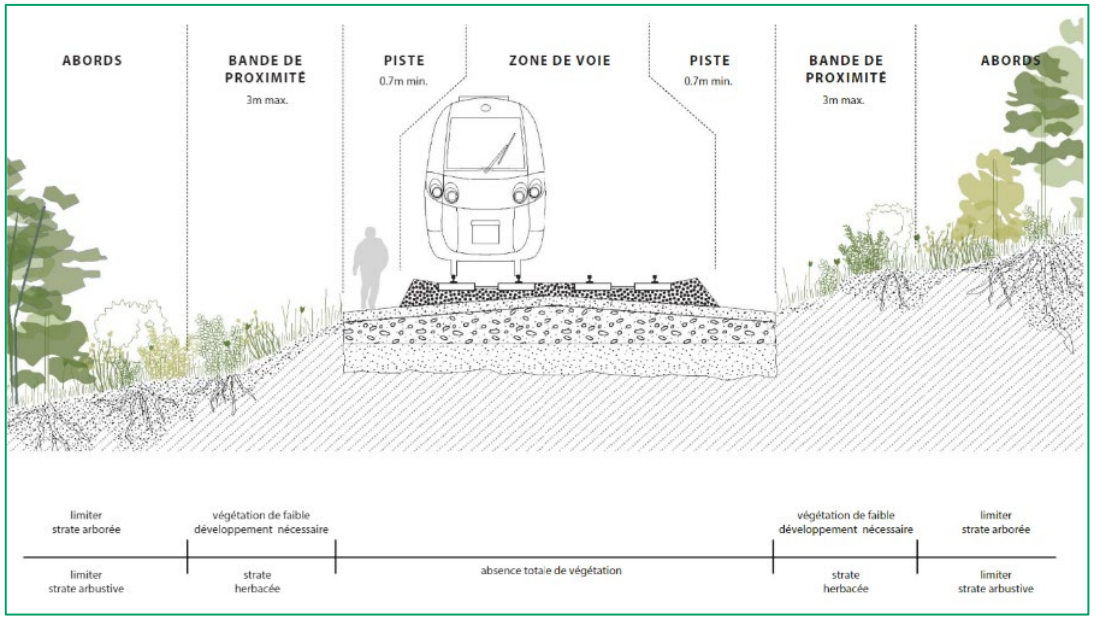

Shared gardens, urban permaculture

A case study in France : ITTECOP Project

Revegetation potential

ITTECOP, an exploratory study on the potential of linear transport infrastructure in France





Area of 16m along the road or railroad of green spaces = **17M km2 to manage**

egis GROUP

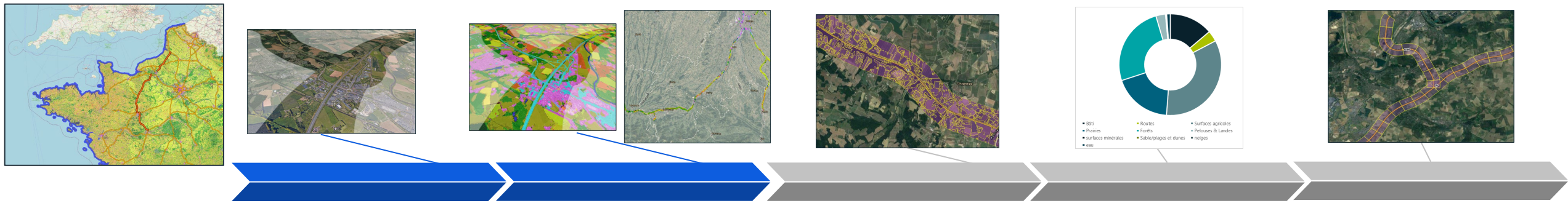
soil.is

A case study in France : ITTECOP Project

Highlight of the study

Study for the Ministry of Ecological Transition (France) :

- Study the potential for carbon sequestration with co -benefits: propose a methodology
- Propose prospective scenarios for increasing carbon stocks
- Identify knowledge gaps for estimating carbon storage in green dependencies



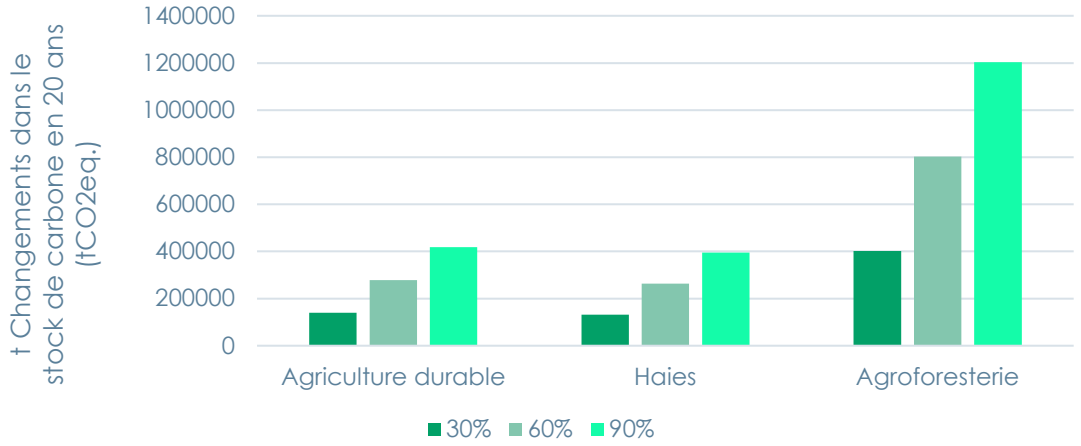
A case study in France : ITTECOP Project

Results on the A28

CURRENT LAND USE

LAND USE CHANGE POTENTIAL

Scope of 500m (high impact)



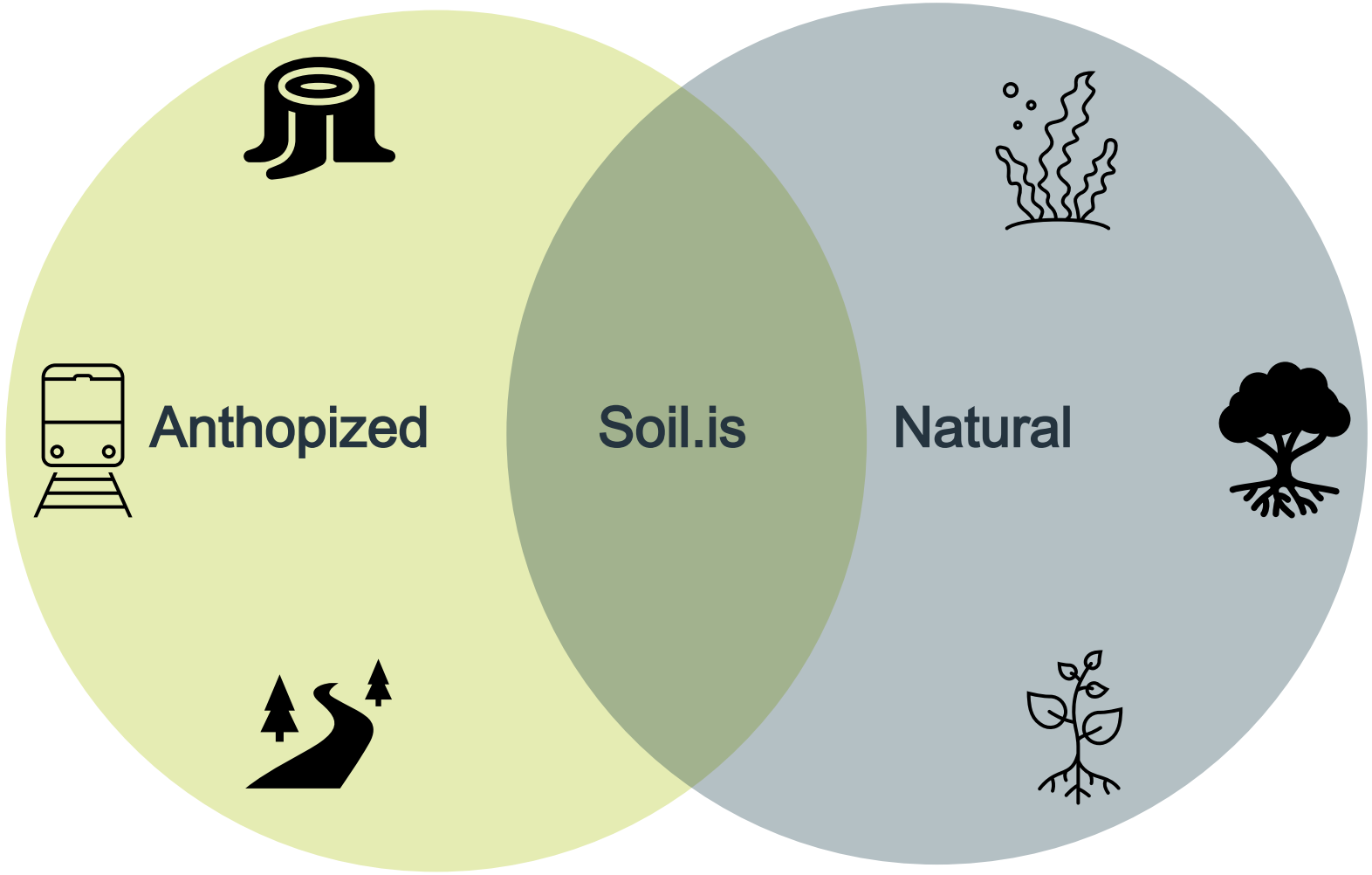
Highlight of three scenarios with results :

- Grassland management with bacteria inoculation to enhance soil carbon : **5% of soils inoculated** leads to **+100 tonnes of CO2eq stabilized in soil in 20 yrs .**
- Hedges management : **10 % hedgerows on grassland** leads to **+800 tonnes of CO2eq stabilized in soil in 20 yrs .**
- Agroforestry enhancement : **10 % hedgerows on agricultural** leads to **+450 tonnes of CO2eq stabilized in soil in 20 yrs .**

egis GROUP

soil.is

Soil.is : boost ecosystem services



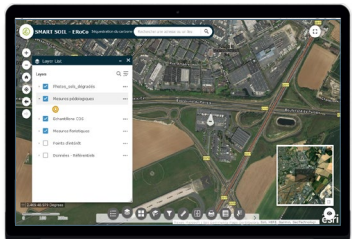
egis GROUP

soil.is

Our method

Combining field approach and digital tools

KNOWLEDGE



- Remote sensing and modelling
- In situ soil measurements and analysis
- Analysis of the social, environmental and regulatory context
- Dialogue with stakeholders and clients to build tailor-made solutions

IMPACT

- Construction and monitoring of accurate and scientifically validated indicators
- Inclusion in certification mechanisms to facilitate reporting
- Obtaining funding

egis GROUP

soil.is

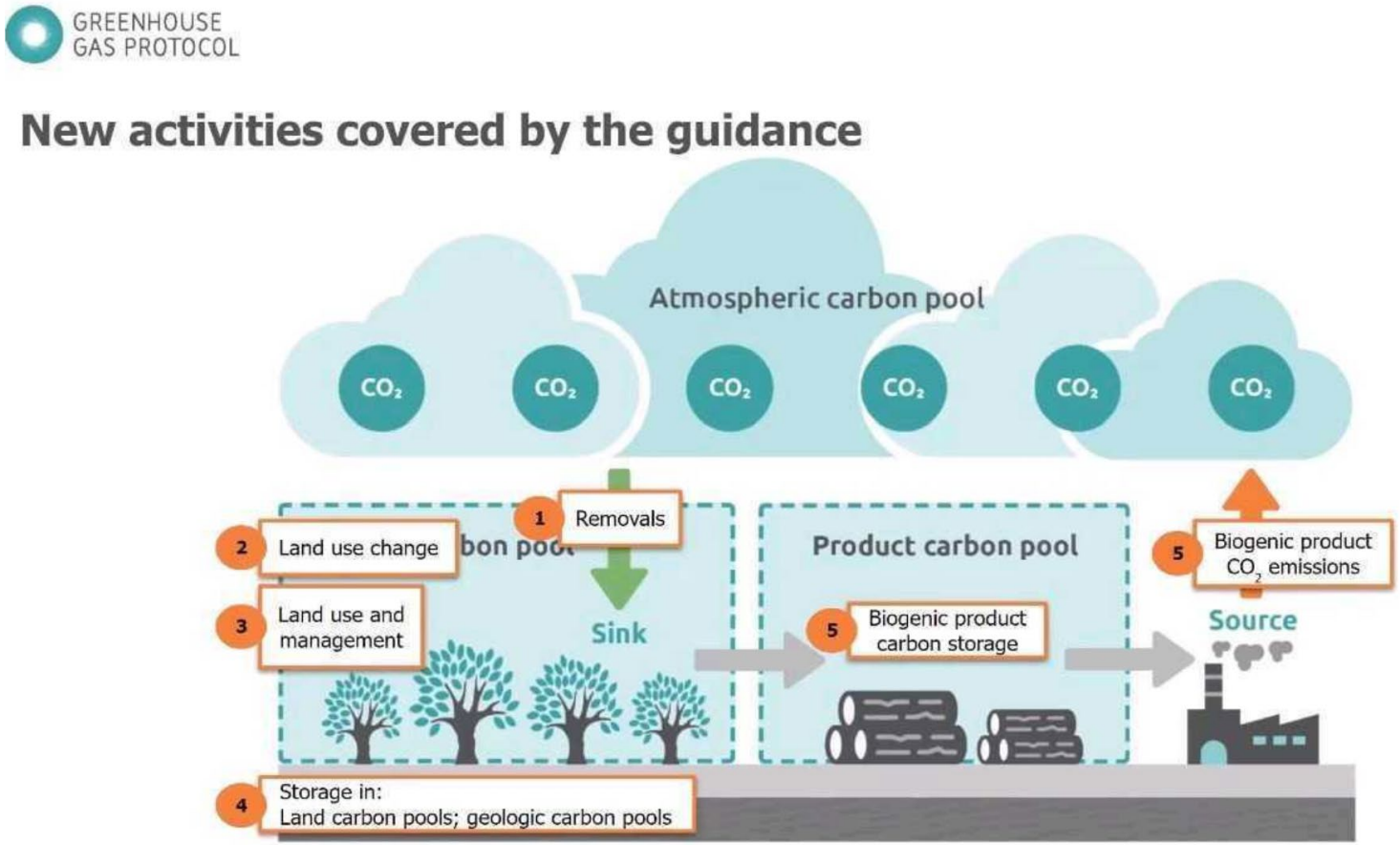
An opportunity for GhG analysis

GhG Protocol method to recognize soil carbon sequestration

GhG protocol is a **international standard** to monitor the carbon footprint.

The GhG protocol has published a **draft methodoly Land sector and Removals Guidance** under review, finalized in Q1 2023.

This Guidance establishes **the way to monitor the soil carbon sequestration** . Soil.is belongs to the peer reviewer group.



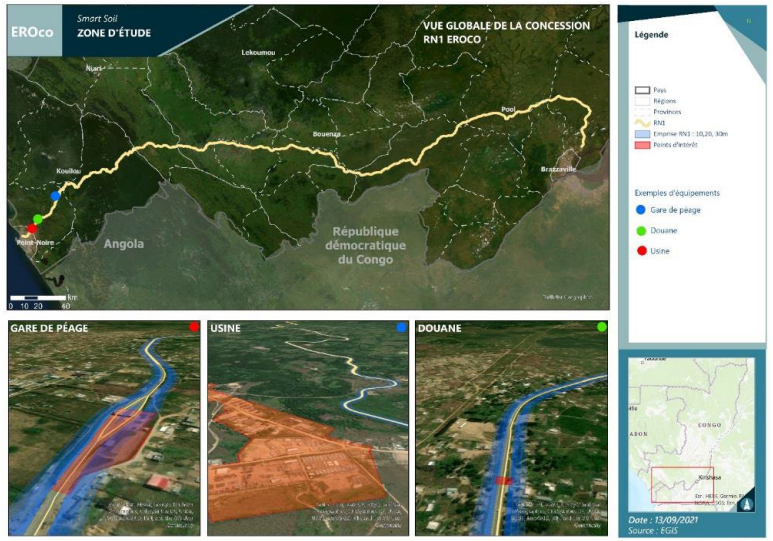
soil.is

Case Study : Road national 1 in Congo

Analysis of carbon sequestration potential along the road

Method : Carbon stock analysis

- Soil analysis and mapping of soil types.
- Sampling and measurement of soil carbon content in the laboratory .
- Result : initial state of the existing carbon stock on the land.



Proposed scenarios for the RN1

Revegetation through multi-layered hedges

Restoration of degraded soils - quarries, mines, embankments

Sustainable agricultural development project

Project to combat deforestation - Mayombe Massif

Projections

On approx. 600 km

Additional potential for *in situ* carbon storage : **46 806 tCO_2 eq/an**

Sequestration cost :
[15 – 29] € / tCO_2 eq

Meet the Soil.is team

Qualified and experienced team

Sofyan Martin

CEO

R&D, innovation and project development expert in France and abroad. 7 years of experience.

Socio-economist agronomist .

Margot Defoort Levkov

COO

5 years of experience in innovation management and management .

Alumni MinesParis & ScPo Strasbourg .

Mohamed Lamine Kadiri

Tech & Data Lead

+ 10 years of Lead Developer experience .

GIS, Smart Data and remote sensing expert .

Trained agronomist .

Lorenzo Rossi

Lead Scientist

PhD. Soil health and carbon sequestration .

Thesis: Carbon sequestration pathways and mechanisms in topsoil and exposed subsoil (H2020 TERRE)

Geraud De Saint Seine

NBS Project Director

+ 10 years of experience in management of major projects .

Expert in bio-waste management and Nature - Based Solutions .

Scientific Council

Mirey ATTALAH (UNEP) Kalina RASKIN (CEEBIOS)

Martial BERNOUX (IPCC) Alain KARSENTY (CIRAD)

Gaël MUSQUET (OpenStreetMap)

Partners

egis GROUP

soil.is