

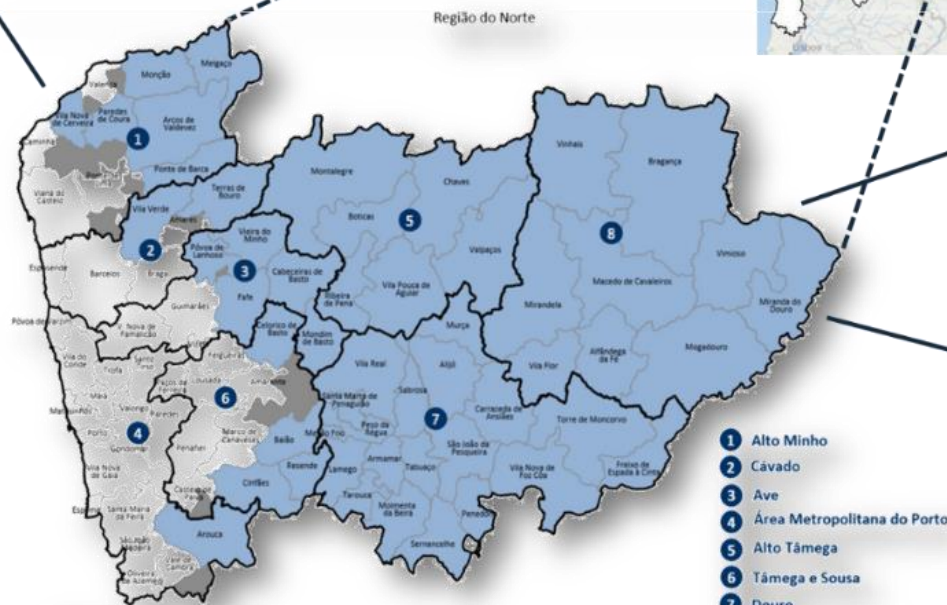
The ABC Challenge

Aqua, Biodiversity and Carbon

Linking Natural Resources Protection, Habitat Restoration and
Carbon Farming

NORTE Region: we come from...

3,6 M inhabitants
35% of Portuguese population
8 NUT III units



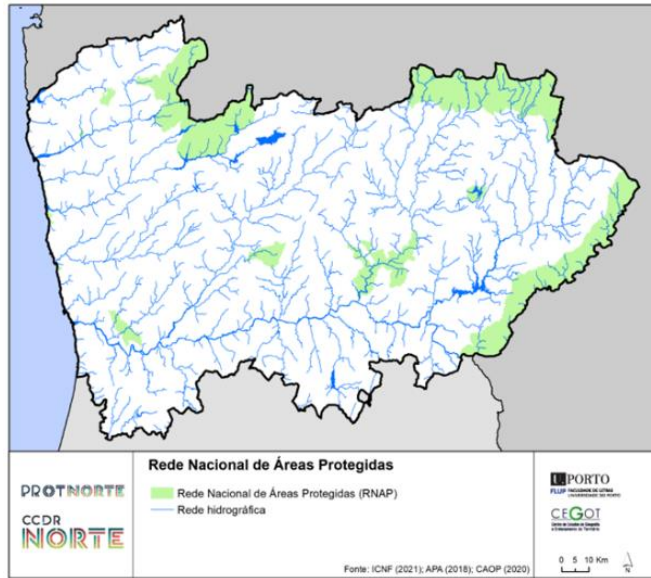
■ municipalities of low density
■ municipalities of high density

- 1 Alto Minho
- 2 Cavado
- 3 Ave
- 4 Área Metropolitana do Porto
- 5 Alto Tâmega
- 6 Tâmega e Sousa
- 7 Douro
- 8 Terras de Trás-os-Montes

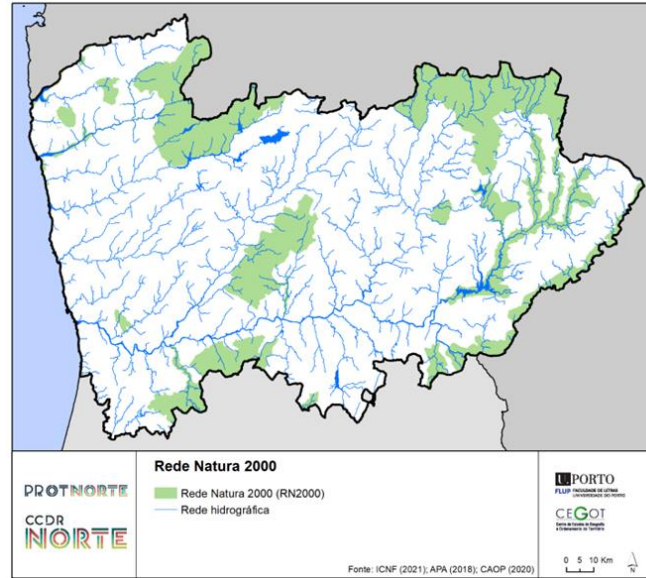
39% national export
29% national GDP (Gross Domestic Product)

24% of Portuguese forest areas
51% of Portuguese wood and cork industries
56% of pulp, paper and packaging industries
64% of furniture industries
47% of national Forest GVA (Gross Value Added)

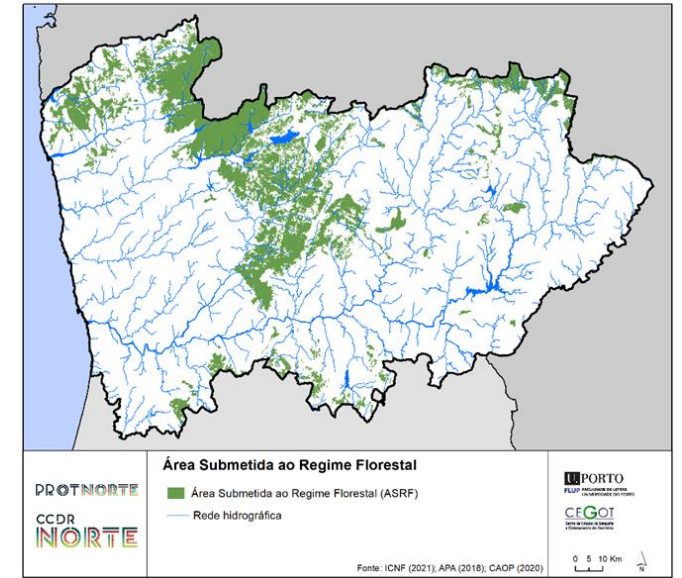
Main Natural assets with legal recognition...



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Protected Areas Network

- 13 different type of PA
- 1 national park
- 4 nature parks and other PA
- 260K ha
- 35% of national PA network

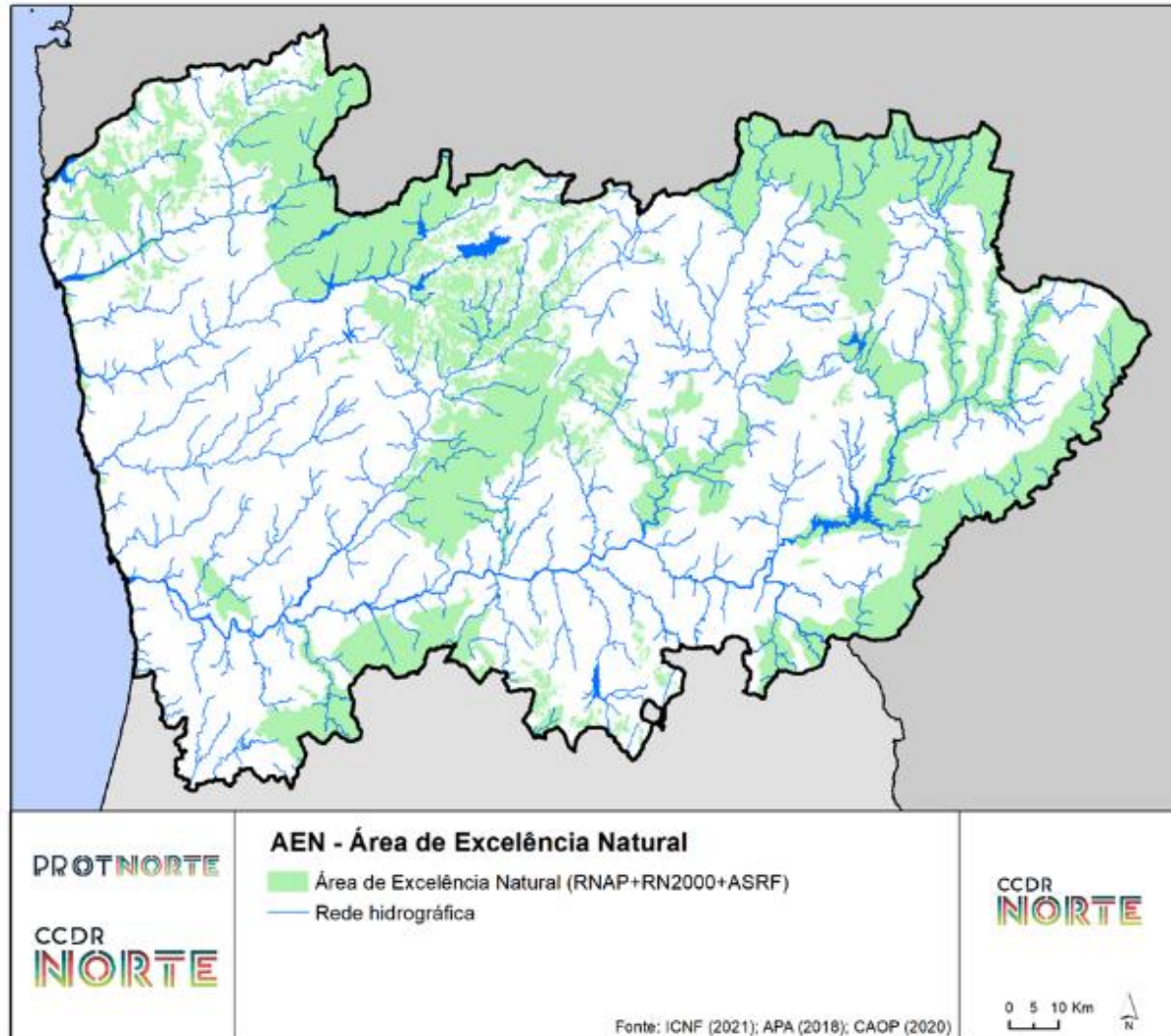
Natura 2000 Network

- 19 SAC Special Areas of Conservation
- 5 SPA Special Protected Areas
- 450K ha (non overlap area)
- 24% of national N2000 network

“Communal Forest” Areas

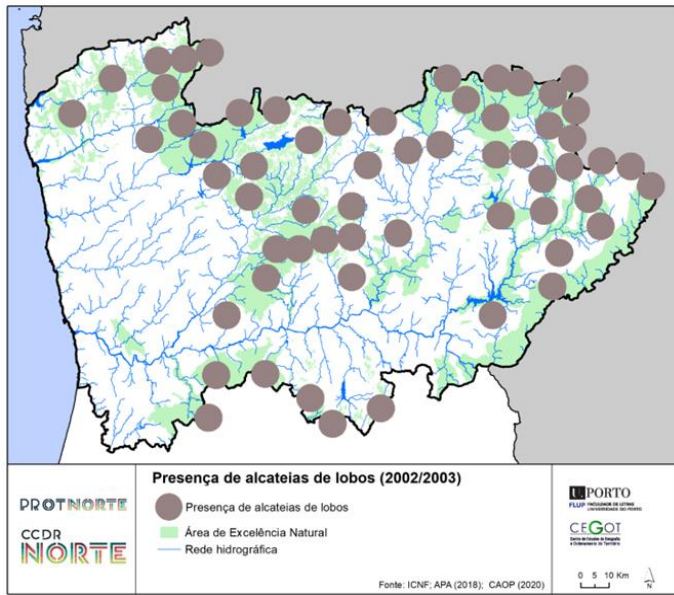
- 53 Communal Forest units
- 98% of commons (baldios)
- 308k ha
- 59% of total “Communal Forest”

Area of Natural Excellence (ANE)



Area of Natural Excellence (ANE)
671k ha of natural excellence areas:
259k ha of forest
273k ha of shrub and rangelands
303k ha of commons (baldios)
74% of the LSU livestock Unit mainly local breeds

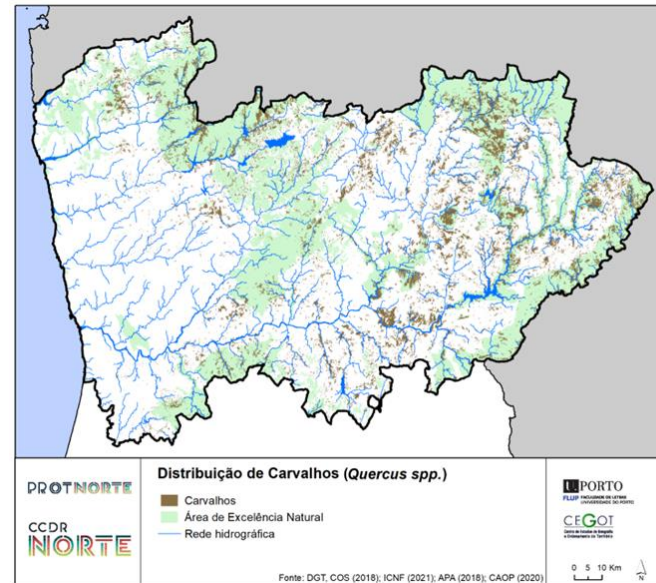
Other strategic natural assets to be considered in the near future...



Wolf packs 2002/2003

60 wolf packs presence
10 wolfpacks outside ANE

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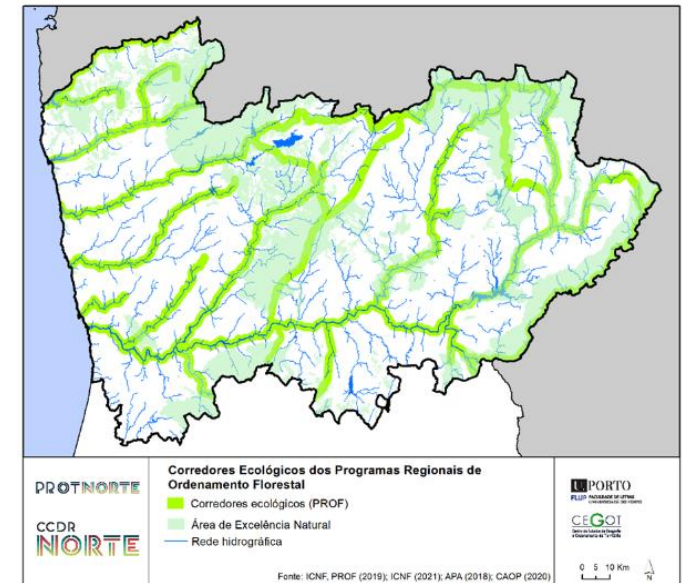


Quercus spp distribution

Common, Pyrenean,
Portuguese, Cork and
Holm oaks

175 895 ha
97 497 ha outside ANE

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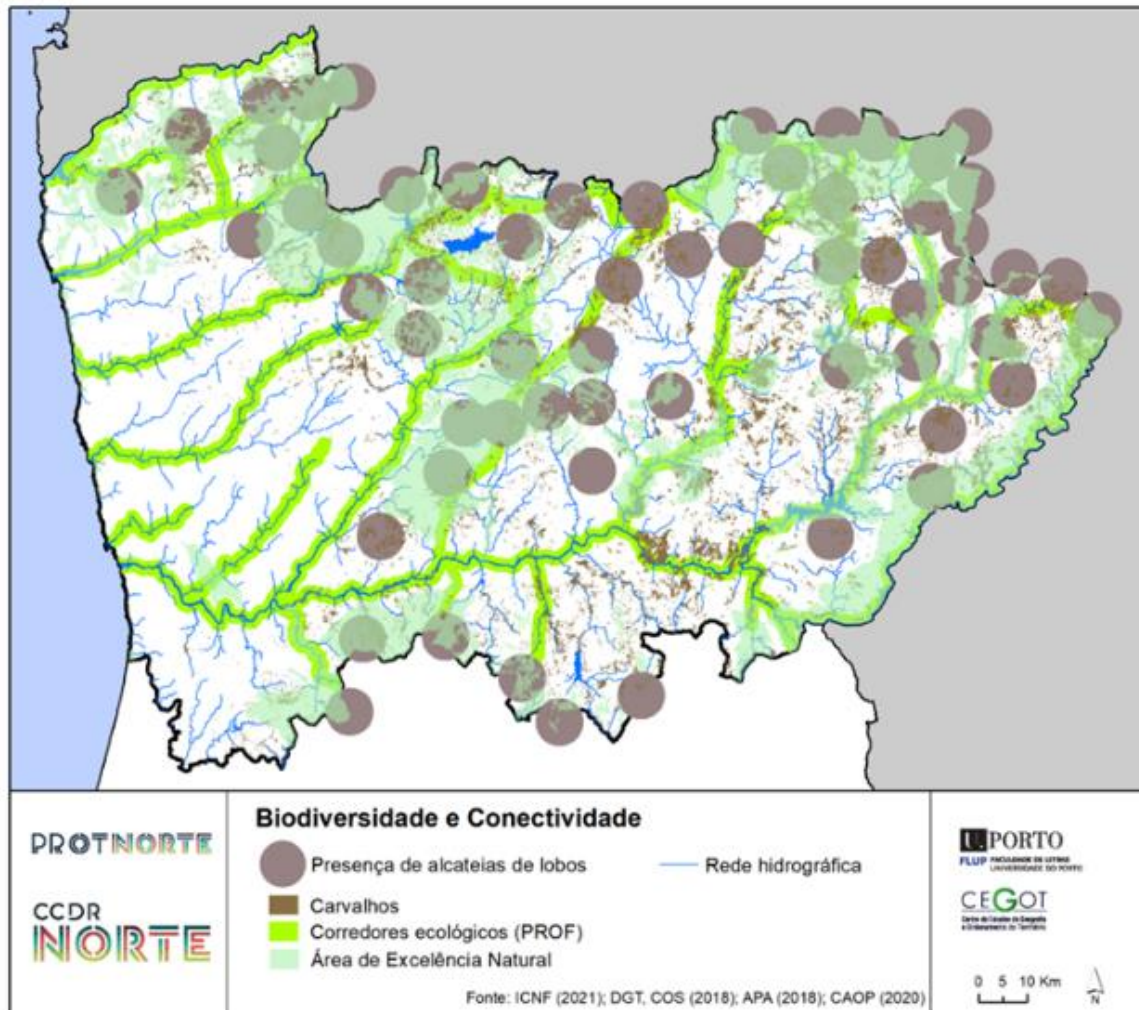
Ecological Corridor Areas

Ridge and valley lines

430 261 ha
247 760 ha outside ANE

Biodiversity and connectivity,

the next step for nature conservation

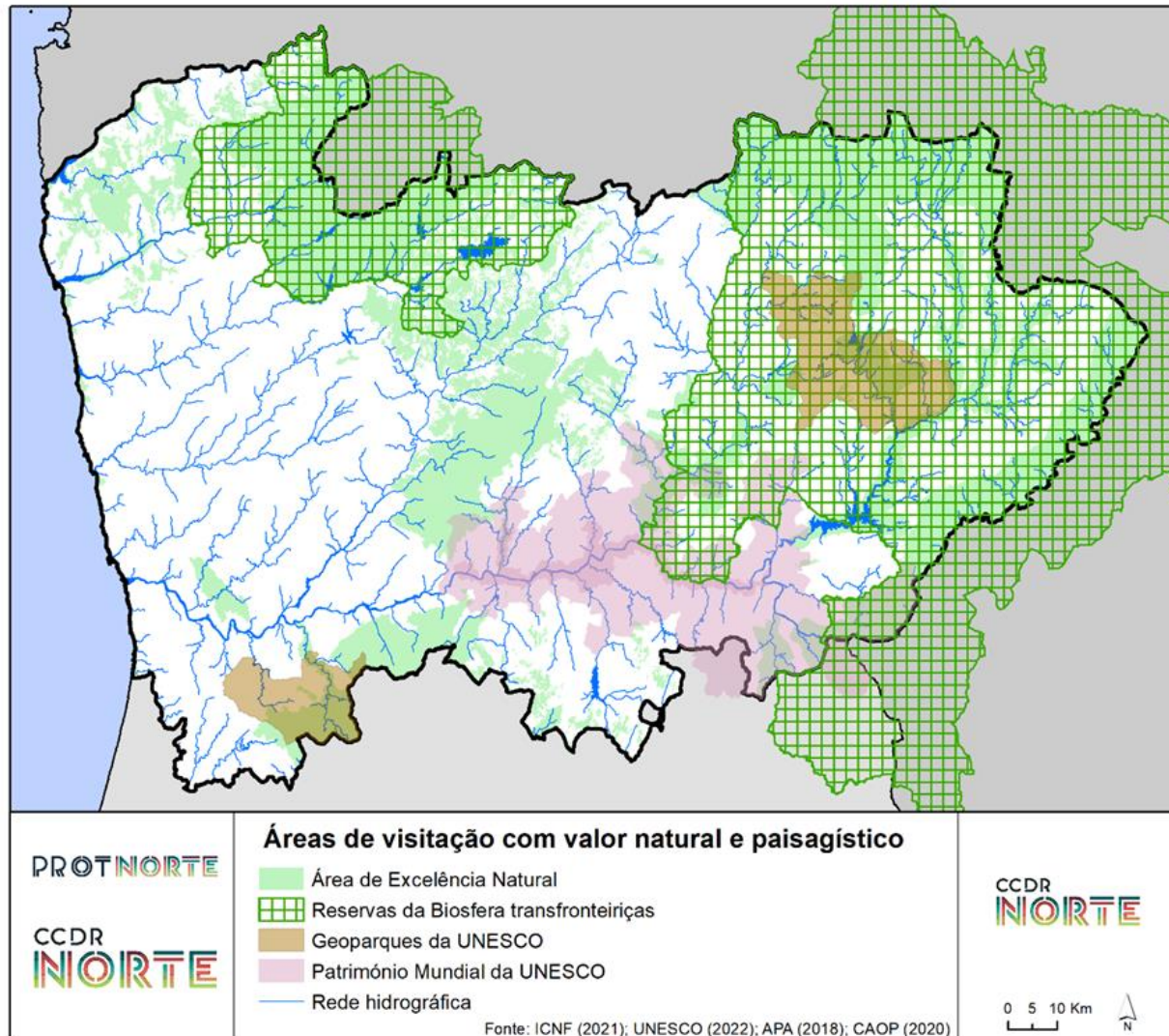


1 million ha

325 758 ha outside ANE

Biodiversity and connectivity,

a (transboundary) plus of sites...



- A UNESCO plus of**
- 2 Transboundary Man & Biosphere Reserves
 - 2 Geoparks
 - 2 World Heritage Cultural Sites
 - 1 Globally Important Agricultural Heritage Site (FAO)

CCDR-NORTE: we are...

- Regional Authority for Land Planning
- Coordinates and manages the EU funding (Region Operational Program – PO reg)
- Negotiating with local authorities the PO reg (total budget of 3400 M € for 2021-27)
- Increasing planning policies' coordination of the regional authorities (nature conservation, forest, agriculture, culture, etc.)
- Chairman of the Regional Commission for the Integrated Management of Rural Fires System (with 50 public and private entities)
- Regional Action Plan for rural fires has been approved with a proposal budget of 2000 M€ for 2023-30
- Will approve our Regional Master Plan (PROT-NORTE) until the end of 2023



About us

We are a **Portuguese engineering and product development center** that conceives, develops and productizes new **technologies, products and services towards a more sustainable society.**

We are one of the highest R&D investors in Portugal, and we work by bridging together cities, industry and universities in high-tech sectors such as **automotive and mobility, aeronautics, ocean and space.**



AUTOMOTIVE



MOBILITY



AERONAUTICS



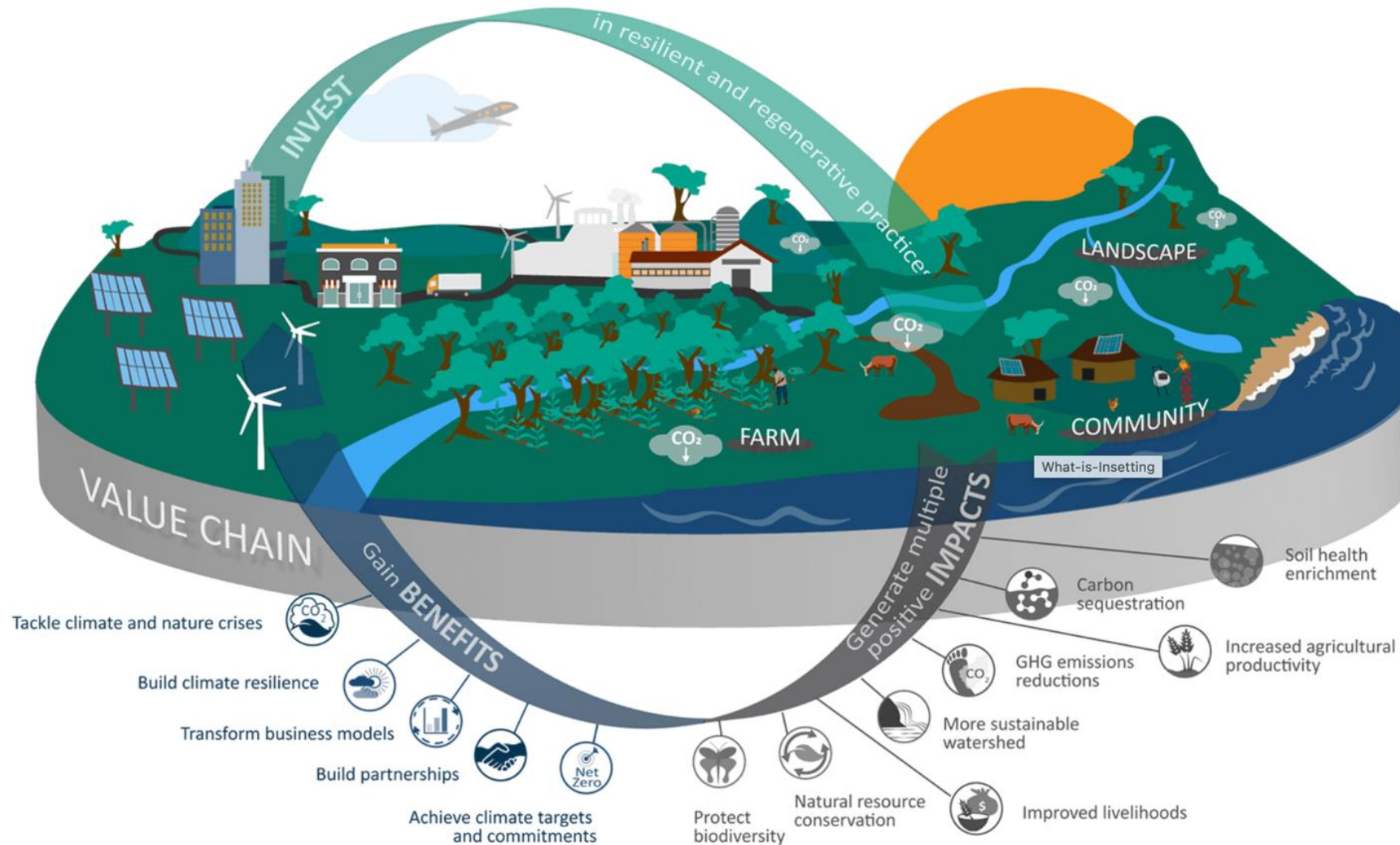
OCEAN



SPACE

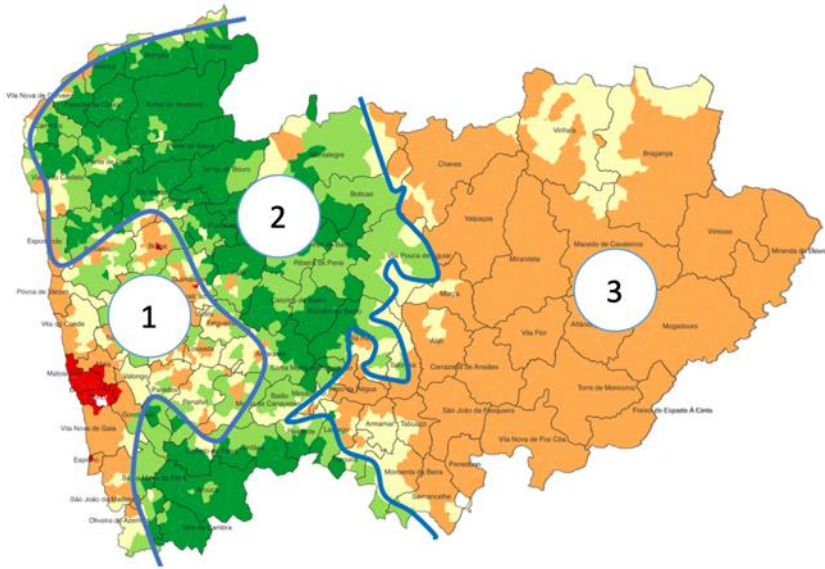
Linking Natural Resources Protection, Habitat Restoration and Carbon Farming

New investment opportunities for territorial integration



Linking Natural Resources Protection, Habitat Restoration and Carbon Farming

Different opportunities for carbon sequestration projects



- The northern region has three homogeneous territories from the point of view of carbon neutrality:
 1. Territories with high GHG emissions and very low carbon stocks - coastal, industrialized;
 2. Territories with low GHG emissions and high carbon stocks – mountainous center with integration of forest, livestock and shrub and rangelands in commons areas;
 3. Territories with low GHG emissions and very low carbon stocks – essentially based on extensive agricultural production and shrub and rangelands

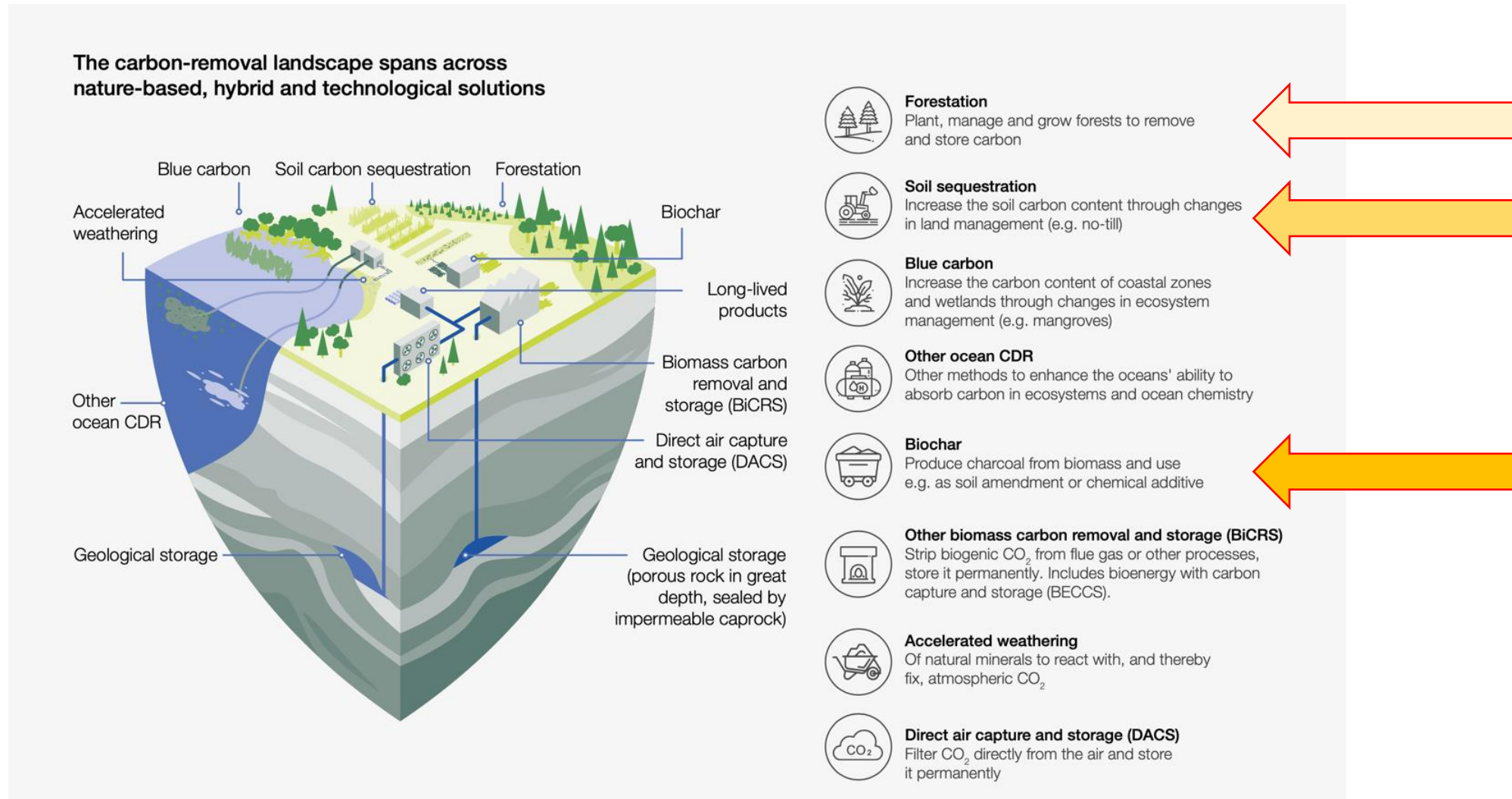
Strategies:

1. Mitigate emissions;
2. Protect carbon stocks;
3. Increase carbon sequestration (increase the stock).



Linking Natural Resources Protection, Habitat Restoration and Carbon Farming

Selecting the project types adapted to local conditions and habitat restoration

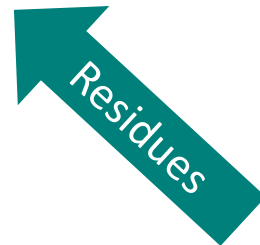


Linking Natural Resources Protection, Habitat Restoration and Carbon Farming

Concept to be implemented in pilots

Residues Valuation through HTP

- Valorization of residues into renewable energies and biochar
- Valorization of residues in Biochar - soil conditioner that allows the sequestration of carbon from the earth, allows correcting the soil PH and increasing the N available for plants (reducing the application of limestone and N fertilizer, responsible for most of the emissions of GHG from agriculture)



Carbon Farming

- Biochar soil conditioner with soil macro and microfauna management for increased productivity
- Use adapted plants and bio-fertilizers to maintain and increase production with lower GHG emissions
- In the case of livestock production, we use adapted pasture plants to reduce bovine methane
- No till agriculture
- Using of catch crops and cover crops

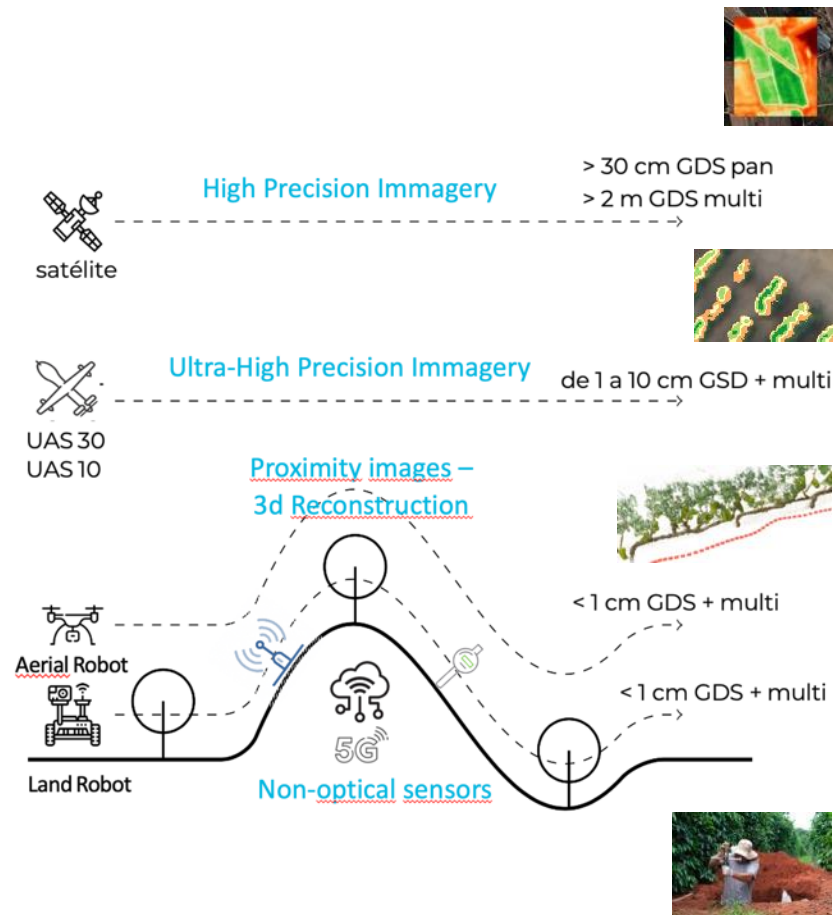


Ecosystem restoration to resist (and become resilient) to wildfires

- Decrease of thermal cargo in rural areas by valuing forest biomass
- Active management of rural spaces for conversion into more resilient areas

Linking Natural Resources Protection, Habitat Restoration and Carbon Farming

With a carbon observatory in place

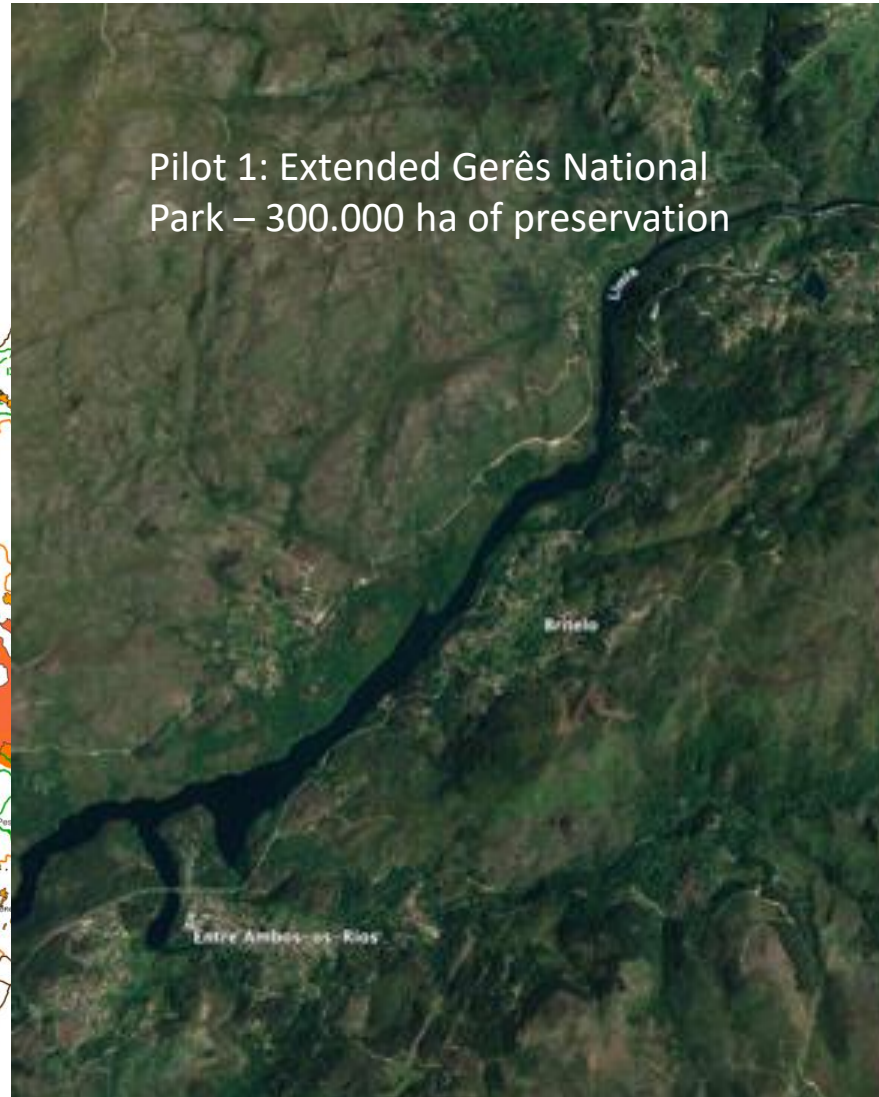
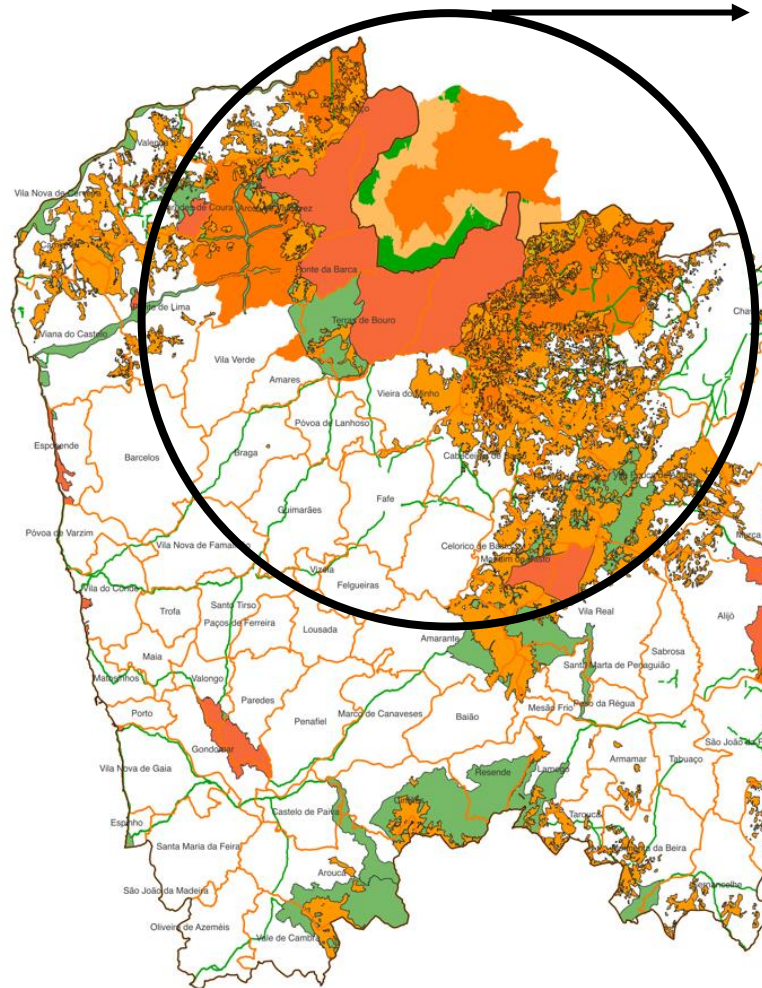


Measuring the impact of sequestration projects (stock increase) or stock protection is critical for demonstrating the success of these initiatives. Being accepted as having an impact, we need to implement an observatory for monitoring, reporting and verification, of:

- additionality of the process compared to business-as-usual
- permanence of carbon sequestered or protected in the long term
- effectiveness and actual quantification of carbon sequestered or protected
- no double accounting
- co-benefits evidence and the guarantee that it does not cause additional negative impacts
- **For this, it is fundamental to create an observatory of land use and carbon, in a first phase associated with the monitoring of pilots, but which in a second phase, can be expanded to the whole territory and then at national and international level.**

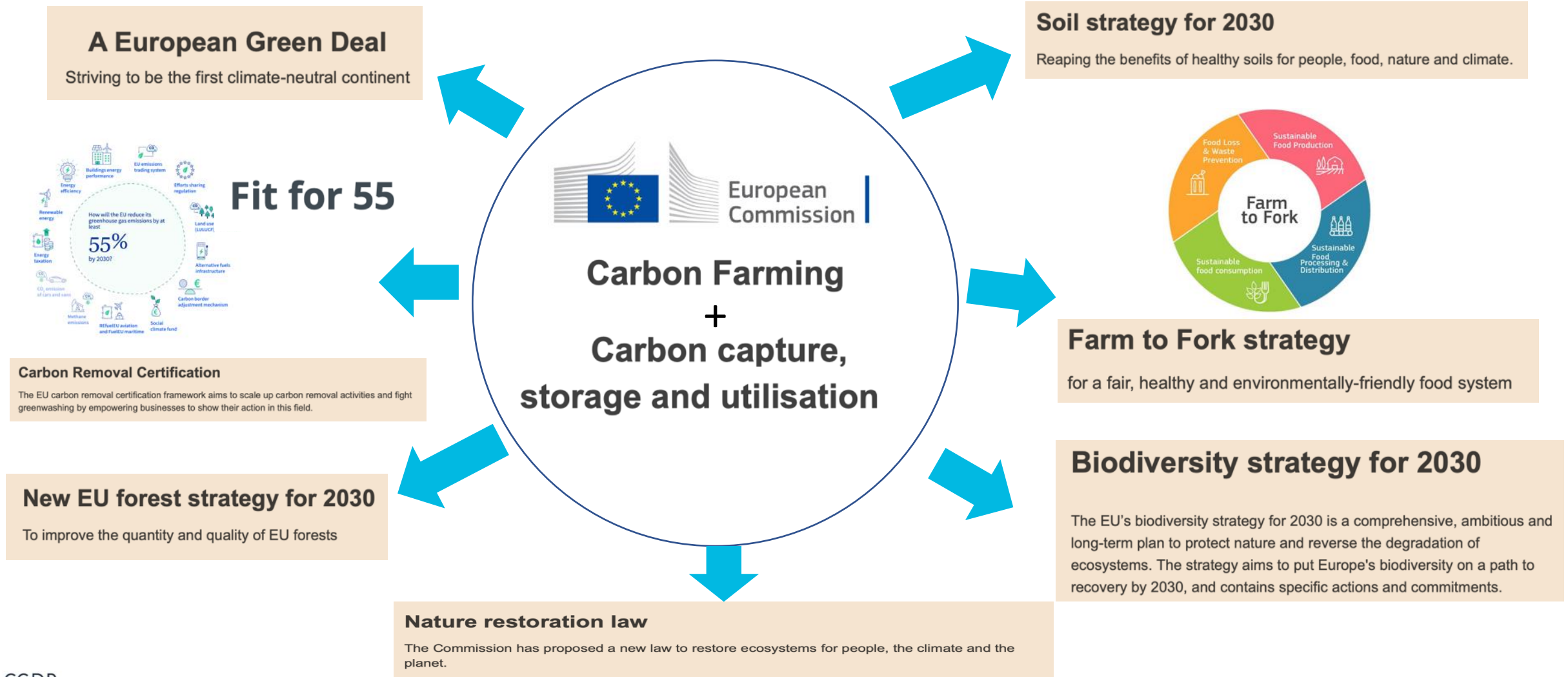
Linking Natural Resources Protection, Habitat Restoration and Carbon Farming

Approved pilot



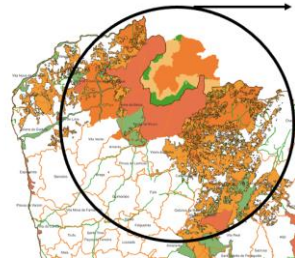
Linking Ecosystem Protection, Restoration and Carbon Farming

Completely aligned with European Strategies and plans



Implementation Plan

Carbon Observatory



Observatory implementation
(24 months)

2023
(6 months)

2023-2024
(12 months)

2024
(6 months)

Land and Use and carbon stock measurement

= Base Line =

2025-2030
(5 years)

2030-2050
(20 years)

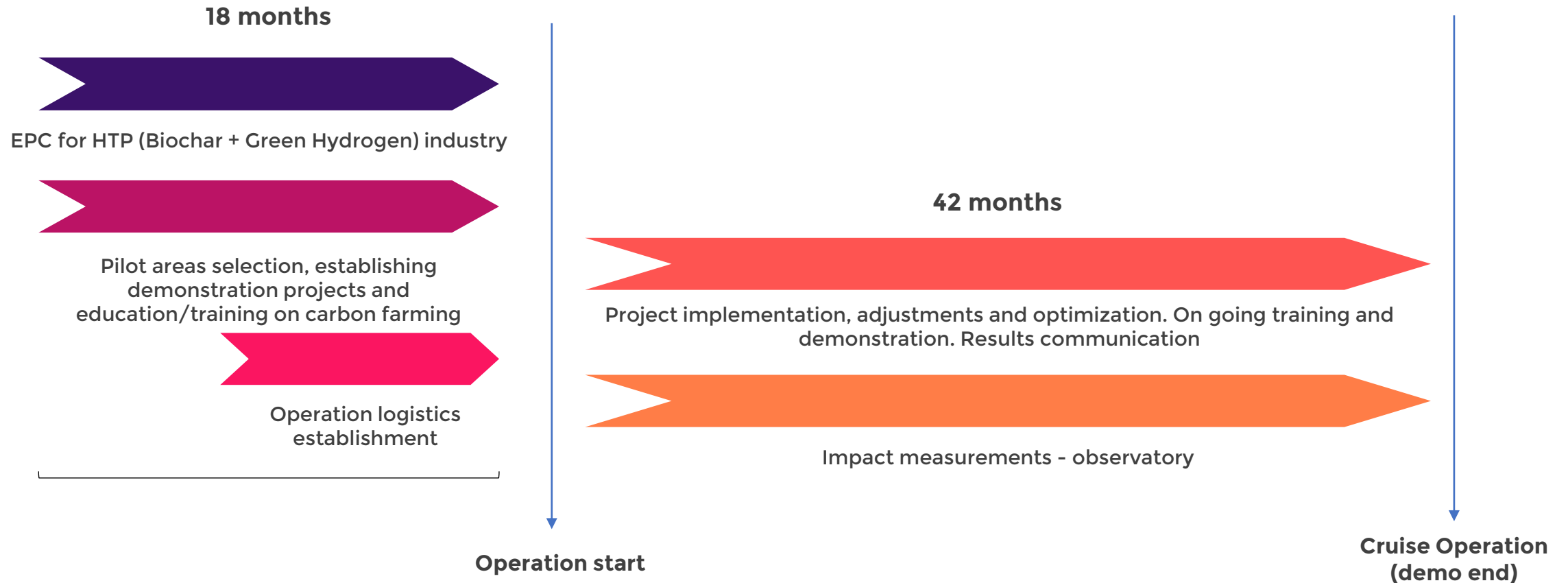
Prediction models, sensors and technology for carbon sequestration

Territorial management models development for carbon farming and stocks protection

Land use carbon stocks change monitorization

Implementation Plan

Natural Resources Protection, Habitat Restoration and Carbon Farming project



The ABC Challenge: we want/we wish...

- Integrate a network of pilot areas
- Allowing a contradictory with other experiences all over Europe
- We have a good knowledge about carbon neutrality
- We have a large area where nature conservation authorities and commons can develop large areas of habitat restoration connected with water catchment protection and carbon neutrality
- It is urgent to set up the pilot area and all the pre-requisite actions to install the “Observatory” that will in the future certify all the neutrality action
- We know our way and we intend to allocated relevant EU funds to do it
- We are making a huge effort with Rural Fires control with this new Integrated Management System and Action Plan
- We are available to integrate a Life project and share results and knowledge

The ABC Challenge: Aqua, Biodiversity and Carbon

The NORTE Region, leading Portugal to Carbon Neutrality in its
Areas of Natural Excellence,

Linking Natural Resources Protection, Habitat Restoration and
Carbon Farming