MLs classification in Carbon sequestration capacity groups

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Fernando Bezares Sanfelip, CESEFOR
Giulia Molisse (IABG)

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Introduction and Goals

- Objectives defined:
  - Classifying Carbon Sequestration Capacity (CSC) groups
  - Identify and develop indicators to assist the estimation of the Current Carbon Sequestration (CCS) within an area.

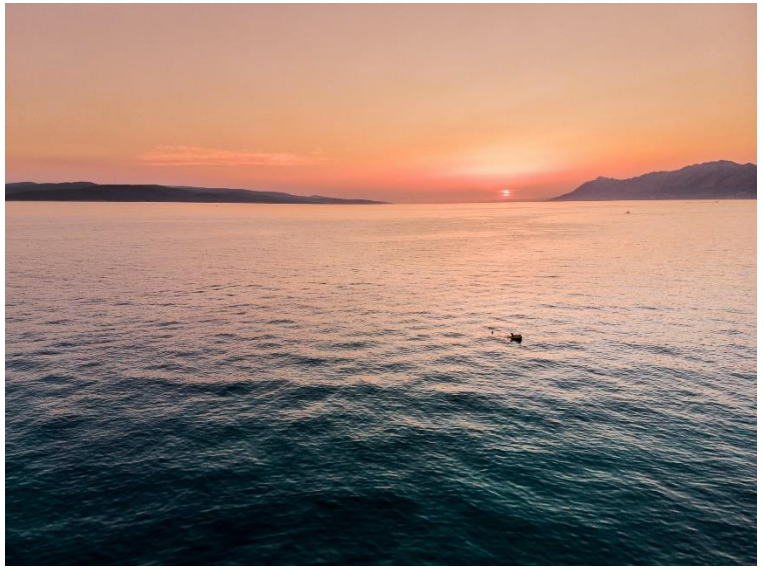
- Scales:
  - Pilot Site, Sierra de Espadán.
  - Europe (Lefteris Mystakidis)

Definitions

- Carbon Sequestration.
- Current Carbon Sequestration (CCS)
- Carbon Carrying Capacity (CCC)
- Carbon Sequestration Capacity (CSC)

Carbon Sequestration

- Carbon Sequestration:
  - Capture of CO2 from atmosphere into:



Carbon Sequestration

- Terrestrial (5 pools)

ABG

BGB

Litter

Woody Debris

Current Carbon Sequestration (CCS)

- Carbon storage in a given moment.
- In a forested area, CCS can be defined as the amount of **carbon stored in the forest biomass the moment of the forest inventory**.
- Typically, the carbon stored in the biomass is assumed to be 50%

Carbon Carrying Capacity (CCC)

- The amount of carbon stored in a forest in a state of dynamic equilibrium and excluding anthropogenic disturbances; this state of saturation is reached when the forest reaches a full-growth, namely old-growth forest. Keith (2009)

Carbon Sequestration Capacity (CSC)

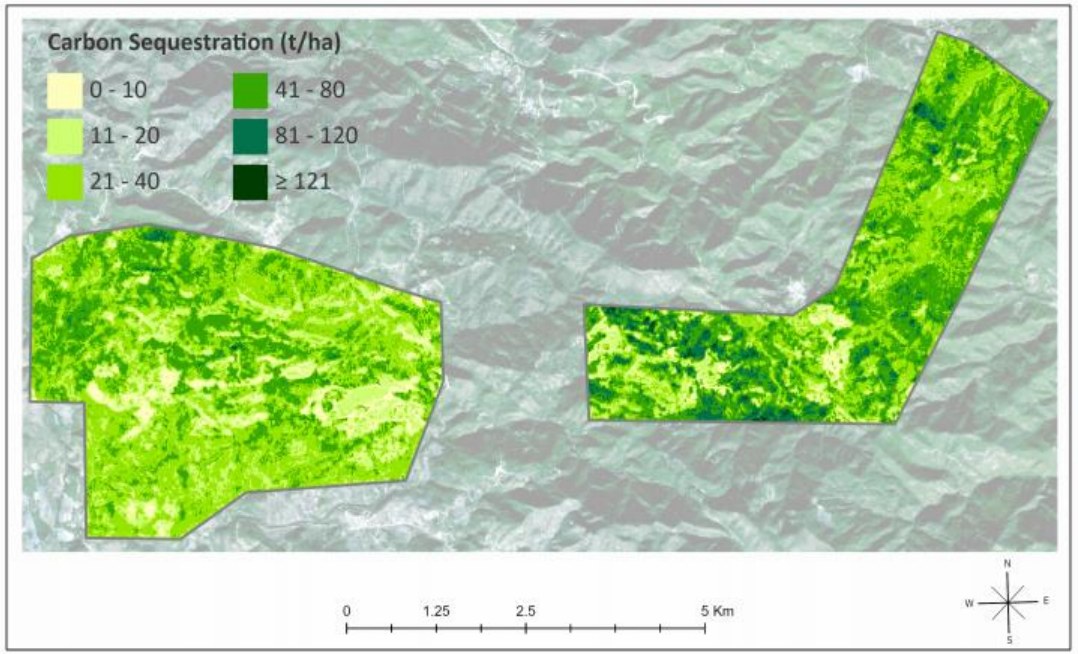
- This is defined as the maximum potential quantity of carbon confinement for a forest in the moment being, and it is estimated as the difference between the CCC and the CCS (Liu, 2012; Keith, 2009; Khan, 2020).

- Formula:

$$CSC = CCC - CCS$$

CCS: Pilot Site Level

- Sites : Espadán
  - CCS: Estimation of the aboveground biomass using LiDAR and Sentinel 2 data.
    - Ground truth data provided by UPV
    - Machine learning algorithms
    - Presented by Dzhaner Emin

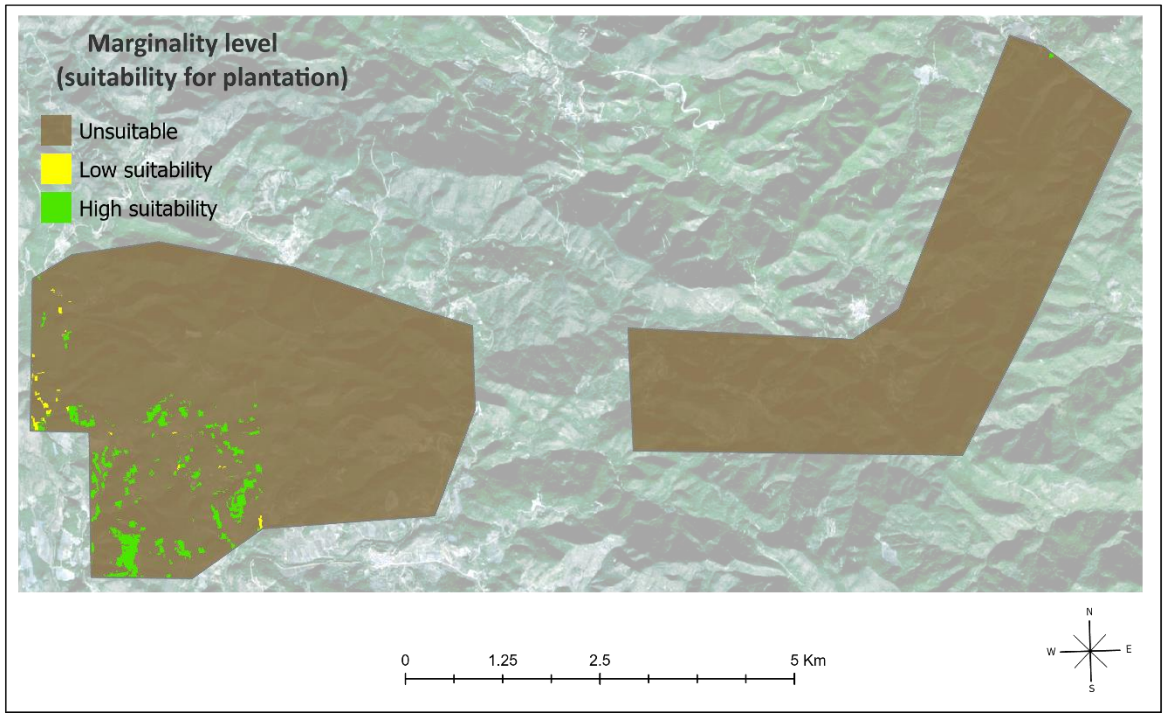


Author : Giulia Molisse

CCC: Pilot Site Level

- Sites : Sierra de Espadán
  - CCC: Result imported from task 4.2 “Quantification of carbon sequestration in the marginal lands”
    - Based on locally calibrated allometric equations and yield tables
  - CCC Values:

ML Class	C t/ha
ML1 (High suitability)	98.2
ML2 (low suitability)	55.2



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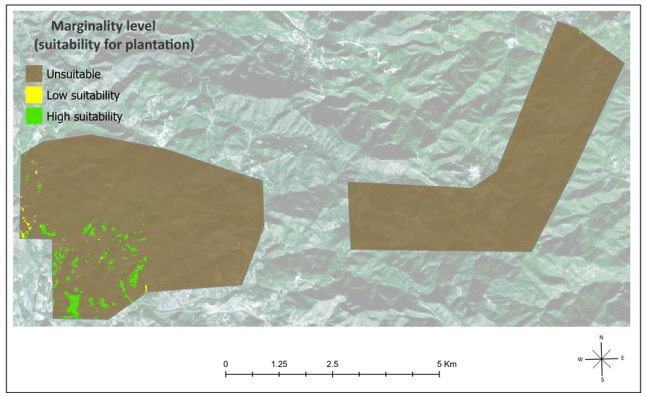
CSC: Pilot Site Level

- Sites : Sierra de Espadán



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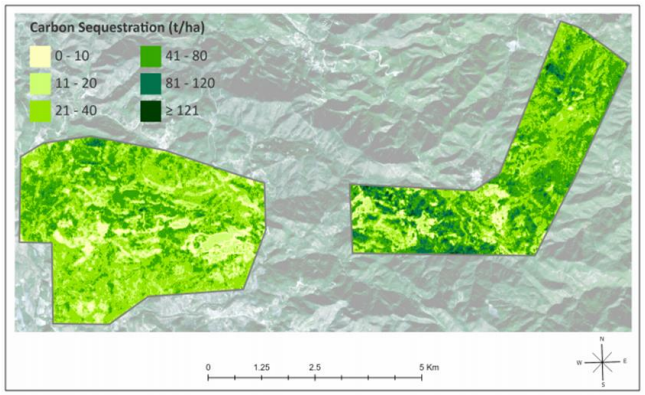

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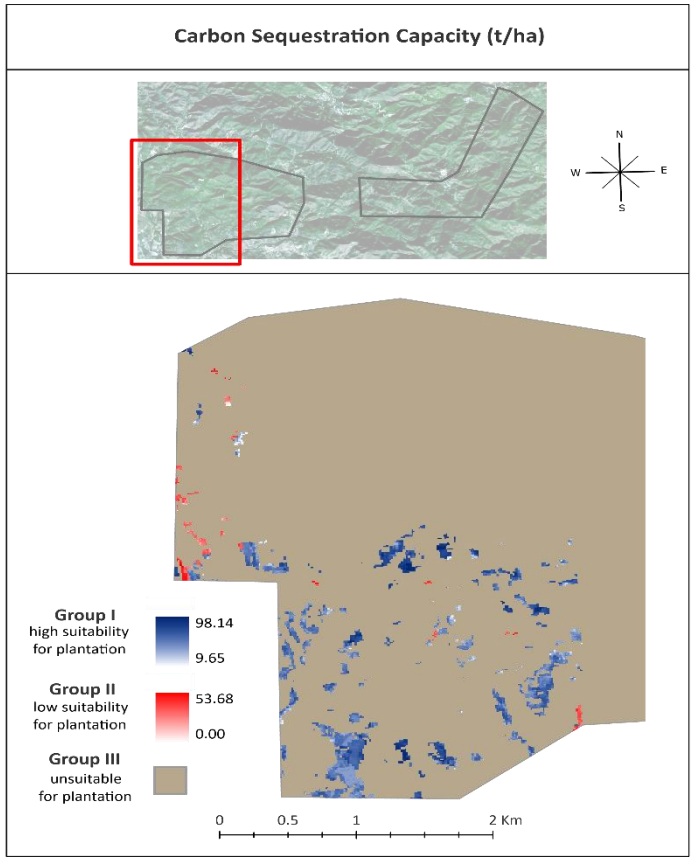

$$CSC = CCC - CCS$$

Figures : Giulia Molisse

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Thank you for your attention!

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Fernando Bezares Sanfelip,
fernando.bezares@cesefor.com