# EO for Monitoring, Reporting, and Verification of Carbon Removals

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# BG6 – High-Quality Blue Carbon Credits at the EU Level - Dream or potential reality?

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For Blue Carbon ecosystems (coastal wetlands, including tidal marshes , mangroves, seagrasses… ) the pace of progress on carbon accounting and removal has been slow. Despite their small surface area, BC ecosystems have the potential to sequester a large amount of carbon. Yet, **these ecosystems are critical to achieving carbon removal goals**

Role of BC ecosystems in the evolving landscape of **carbon markets**

- Potential of coastal and marine ecosystems in **carbon sequestration and storage**
- **Methodologies** for quantifying and monitoring these carbon sinks, and **role of EO**
- Challenges and opportunities in integrating Blue Carbon projects into existing **carbon market frameworks and policy developments** such as within CRCF

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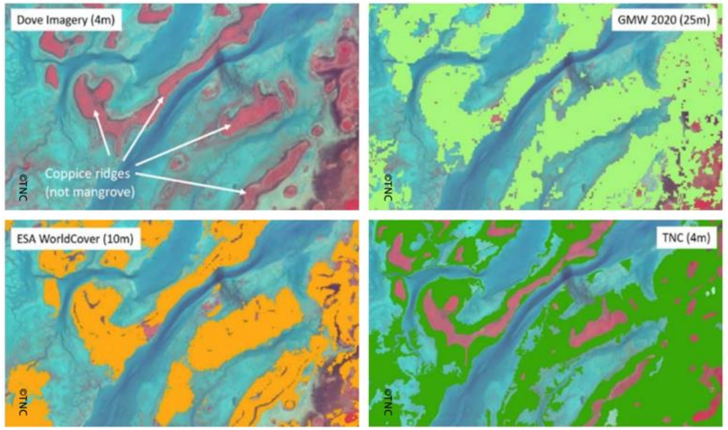
## State of the Art - 1st baseline of blue carbon stock

Key challenges include the difficulty of mapping submerged ecosystems like seagrasses and the limitations in assessing soil carbon pools. New EO technologies and improvements in spatial, spectral, and temporal resolution hold promise for better understanding and managing blue carbon stocks.




Schill et al.

- EO technologies allow more systematic Mapping of BC ecosystems. International collaboration and In-situ measurements plans are much needed
- Biomass and carbon content are coming after good mapping. Below ground (80%) remains a big unknown
- Insight from carbon loss in Madagascar. The attribution to anthropogenic/natural cause is difficult due to a dynamic environment

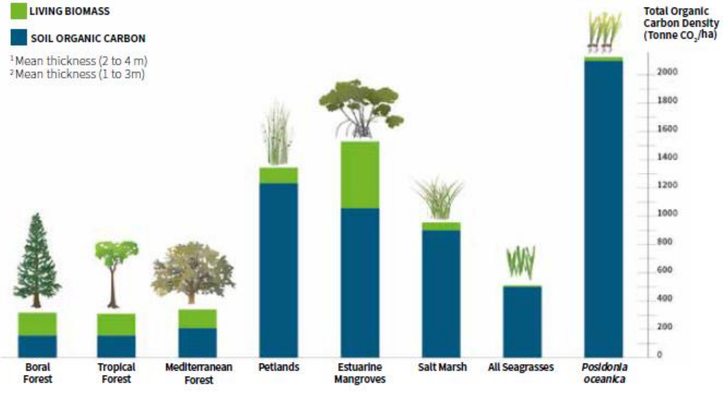



**Figure 5: Comparison of soil $C_{org}$ storage in the top metre of the soil with total ecosystem $C_{org}$ storage for major ecosystem types.** Here, the seagrass *Posidonia oceanica* is a unique seagrass in terms of the quantity of organic carbon that can be stored in its sediments and matte. Soil Data: Top meter sediment [12, 111, 112, 113].

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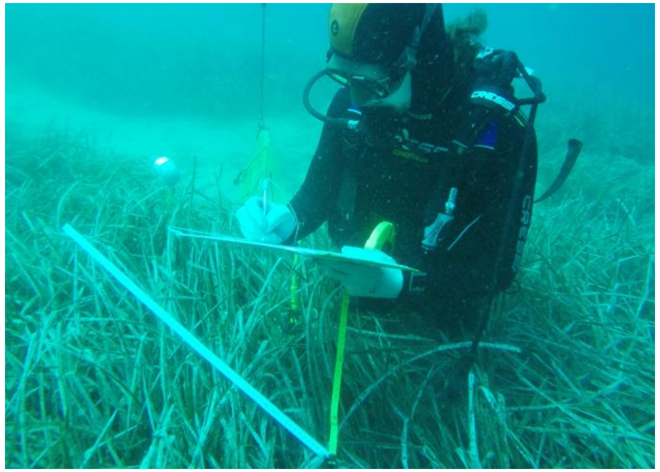
## Moving Forward: Action Now Is Better Than Perfection!

The focus here is on understanding the urgency: **what should be protected**, in what priority order, and within what timeframe to prevent carbon loss and ecosystem degradation? Also, **make BC ecosystem accountable for EU and national climate plan**



- How can EO **reduce uncertainties in measuring additionality** for BC projects?
- What **methodologies** can EO support to ensure that **carbon sequestration is verifiable and creditworthy**, even in the face of inherent ecosystem variability?
- How can **EO be integrated into policy frameworks** to ensure rapid response to ecosystem degradation or opportunities for carbon gains?

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## Investment needs for scaling Blue Carbon projects

**Investment is needed in advanced EO tools** such as hyperspectral imaging, AI-enhanced data processing, and high-resolution satellite imagery. These tools can be used to **track both above and below-ground (tbc)** carbon stocks and detect early signs of ecosystem degradation. Investments should also focus on **ground calibration sites and training to ensure the accuracy of EO data**

- How can EO provide the **transparency needed to foster trust** in Blue Carbon projects and carbon credit markets?
- What role can EO play in ensuring the **accuracy and credibility of parametric approaches** to carbon credit estimation?
- Can EO support **innovative financial models beyond carbon credits**, enabling new investment mechanisms for BC ecosystems?

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