

Estimation of Soil Carbon Credits: Innovative Approach of the CO2MARCHE Project

The growing concern about climate change has highlighted the need to adopt practices that contribute to mitigating harmful effects on our environment. In this context, the CO2MARCHE project stands out as a pioneering initiative, exploring efficient sampling methodologies for calculating soil carbon credits. This article is intended for forest managers and consultants who seek to understand the relevance and application of these methodologies in their daily practices.

The main goal of the CO2MARCHE project is to provide tools for the accurate quantification of carbon credits, avoiding incorrect estimates that could affect the credibility of carbon offsetting. The methodology is based on international standards from the Intergovernmental Panel on Climate Change (IPCC), complemented by a local approach developed specifically for the project.

Although the method is based on the robustness of the IPCC, which offers a solid framework for carbon quantification, there is an additional specific methodology implemented by the CO2MARCHE operational group, making the process more precise. This approach involves the analysis of specific data for each additionality measure compared to the Business As Usual (BAU) scenario, such as plot conversion, extending the cutting cycle, and fire prevention.

The project covered approximately 9,000 hectares of forests that were managed for several decades, where dendrometric data was available to serve as a reference for adjusting the IPCC models to the reality of biomass growth and subsequent CO₂ capture. This adjustment is crucial to ensure that carbon estimates reflect the actual increase in biomass recorded in the project areas.

Benefits of Active and Sustainable Forest Management

One of the highlights of CO2MARCHE is the emphasis on active forest management, demonstrating that restorative and regenerative practices are fundamental for generating carbon credits. The sustainability of these managements is validated through rigorous certifications such as the new standard of the PEFC (Programme for Endorsement of Forest Certification) system in Italy, which, in addition to harmonizing with international standards, requires that forests be managed sustainably.

The implementation of the CO2MARCHE methodology made an important step in developing the national PEFC standard for carbon credits, which can only be requested if forests are managed according to PEFC sustainable standards. In Italy, this work was facilitated by the National Carbon Credit Registry, creating a regulated system that supports these certifications.

In the Marche region, the project also participated in a broader initiative for CO₂ preservation and capture in the forestry sector. With a focus on mountainous areas and the region affected by earthquakes, the developed practices aim to protect against forest fires, mitigate the risk of natural disasters, and preserve biodiversity, while also addressing issues related to water and air quality.

To achieve these results, forest and laboratory analyses were conducted, encompassing above-ground biomass, litter, organic matter, and soil. In addition, local forest workers were trained in best forest management practices, thus promoting a qualitative increase in local skills.

Another relevant point was the training of stakeholders in effective communication, aiming to disseminate the environmental value of the ecosystem services promoted by the project within the communities.

As these competencies are built, fundraising and the search for financial support or sponsors are facilitated, establishing an economic value recognized for carbon capture.

The development of a voluntary sustainability credit exchange platform is part of the project's objectives, aiming to assign monetary value to carbon capture as part of the Payment for Ecosystem Services (PES) initiatives.

Conclusion

For forest managers and consultants, understanding and applying the methodologies developed by CO2MARCHE can represent a significant advancement in the quantification and certification of carbon credits. This project not only contributes to the sustainability of forest management but also strengthens environmental preservation initiatives with a direct impact on mitigating climate change, becoming a promising reference for future practices.

Initiatives like CO2MARCHE demonstrate that the combination of rigorous methodologies and sustainable forest management is both possible and necessary to achieve tangible results in the fight against climate change. For those at the forefront of forest management, it is essential to adopt these pioneering approaches and contribute to a greener and more sustainable future.

Further information

[More information about CO2marche operational group.](#)

Contacts

Gregorio Fantoni (gregorio.fantoni@unifi.it)

FOREST4EU partners:



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 FOREST4EU Project
 FOREST4EU Project
 info@forest4eu.eu

