FOREST4EU

ITHub 3 - Sustainable Forest Management and Ecosystem Services

FOREST4EU partner: UNIFI
OG: CO2S.Fo.Ma
OG's country: Italy
Type of Innovation: Process

Efficient Sampling Methodology for Calculating Soil Carbon Credits

Introduction

Soil Carbon Credits are additional carbon credits that enhance ecosystem services, such as C stocking and improving rural economy, and SFM applicability. Soil Carbon Credits are additional carbon credits that enhance ecosystem services, such as C stocking and improving rural economy, and SFM applicability. Data from 5 different C pools of forests were estimated for the quantification of total organic C in 3 forest sites: Above and below ground biomass (AGB; BGB), litter, dead wood and soil. AGB C was estimated in sample plots on an INFC model, BGB C was calculated using specific root-to-shoot ratios (RSR), dead wood by field analysis (measurements of the diameter of dead wood >2.5 cm and the classification based on decomposition classes on a transect) followed by the application of a function to calculate the C stored; litter C stock through the ratio of organic C mass to surface area and SOC by collection of composite samples taken at 3 different depths (0-5 cm, 5-15 cm, 15-30 cm)and rock% and Bulk Density (BD) calculation, followed by SOC estimation through elemental analyzer.

Thanks to this analysis it was possible to calculate the total C content of the forest ecosystems and compare the C storage capacity of conventionally managed forest plots (unmanaged or coppiced) and plots under SFM (transitional forest).

Lessons learned

SFM supports C storage in the various forest compartments, (soil, biomass and necromass) increases the provision of ecosystem services, forest productivity, and contributes to climate change mitigation while providing support to the local rural economy

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Further information

https://www.co2marche.it/

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