



Acronym	ALPFOR-CSF
Full Title	Climate Smart Forestry and management adaptations of Alpine Mountain
Partner(s)	Eurac Research, Italy
Grant Theme	Establishing Climate-Smart Forestry and forest restoration pilots in Europe
Start Date	April 2025
Duration	18 months
Description	Direct and indirect effects of climate change are dramatically impacting European forests. Climate smart forestry (CSF) aims at integrating mitigation with measures of adapting forests to future conditions, and at the same time enhancing forest resilience and maintain key ecosystem services. The objective of ALPFOR-CSF is to establish new field trials for long-term forest monitoring to assess the impact of CSF practices in forests of the Italian Alps. Our trials within three study areas cover several aspects of CSF in the Alps, such as the implementation of adaptations to management interventions in Norway spruce stands for composition enrichment and structure diversification to promote ecosystem functioning and improving the trade-off among timber production, carbon sequestration, and biodiversity conservation. In both control and CSF treatments, important variables are collected pre- and post-treatment execution at both stand- and tree-level, such as diameter, tree locations, canopy structure, soil carbon, microclimate, deadwood amount, tree microhabitats, and regeneration. Ground- and UAV-based imagery techniques are used to depict forest structure at stand-level, while dendrometers and inventory-based methods are used to monitor forest growth at the tree-level. These variables are used to derive CSF indicators and to quantify the potential for carbon mitigation and the provision other ecosystem service of such practices. Simulation modelling will also be applied to predict future stand development under climate change. Finally, we will survey forest managers regarding their perception on CSF and maintain an open data repository that will feed into the ForestWard Observatory.



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