FoResMit

"Recovery of degraded coniferous Forests for environmental sustainability Restoration and climate change Mitigation"

LIFE14 CCM/IT/000905

The general objective of the proposal is to define the guidelines of good silvicultural practices for the restoration of peri-urban degraded coniferous forests in Italy and Greece with native broadleaved species, improving the ecological stability and climate change mitigation potential of these ecosystems. The project aims at testing and verifying in the field the effectiveness of management options for the conversion of degraded coniferous forests in meeting climate change mitigation objectives. The project will provide data on vegetation structure, biomass increment, C accumulation in all relevant pools of vegetation and soil, and CO2 and other greenhouse gas emissions, thus giving a complete picture of mitigation potential of management practices.

- In detail the innovative thinning treatment will result in:
- increased net primary production of forest ecosystem, due to the removal of non-growing or dead trees and the higher growth rates of remained vegetation. An increment of productivity up to 40 – 60 % can be expected;
- an initial increase of greenhouse gas emissions is expected, followed by a stabilization towards a reduction after thinning treatment;
- reduction of heterotrophic respiration of decomposable deadwood material, with a consequent
- reduction of CO2 emissions in the range of 5-15 % per year is expected in the medium-long term;
- only minor changes in N2O and CH4 emissions are expected, although their accounting is very
- important due to possible high peaks of N2O emissions in the short term that might alter the global warming potential;
- the decrease of standing biomass due to harvesting will be counterbalanced by the energy cogeneration
- of wood material as fossil fuels substitution option. We expect a neutral balance from living;
- plants and a positive balance from dead trees, corresponding to 40 % of forest biomass;
- carbon credits deriving from the thinning intervention will be quantified;
- selective thinning andharvesting to reduce tree densities and remove deadwood material will reduce the probability and intensities of fires;
- updated knowledge about the effectiveness of new forest management practices in meeting climate change mitigation objectives;
- evaluation of management effects on health status of coniferous stands, ecological stability and restoration;
- demonstration of an innovative thinning treatment to adopt for the restoration of degraded coniferous forests, enhancing ecosystem stability, productivity and mitigation potential.

To fulfill its objectives, the project will be arranged into the following actions:

- actions related to the preparation of the project, site classification and characterization;
- implementation actions;
- actions dealing with the monitoring of the impact of the concrete actions;
- communication and dissemination actions
- project management and monitoring of project progress actions.

THE PARTNERS:

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