

Ectomycorrhizal fungi a natural-based tool for the improvement of biomass production and a sustainable forest management

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INTRODUCTION

Forests represent critically important habitats for the ecosystem services they supply, through the regulation of local and global climate, improvement of biomass productivity and the quality of forest management.

Forests provide many products and services, such as biomass, that contribute to socio-economic development in rural areas. Alongside this, climate change is raising the frequency of drought and vegetation fires, in fire-prone regions of the world, through the reduction of fuel humidity and the increase of fire risk and fire spread, rising wildfire severity.

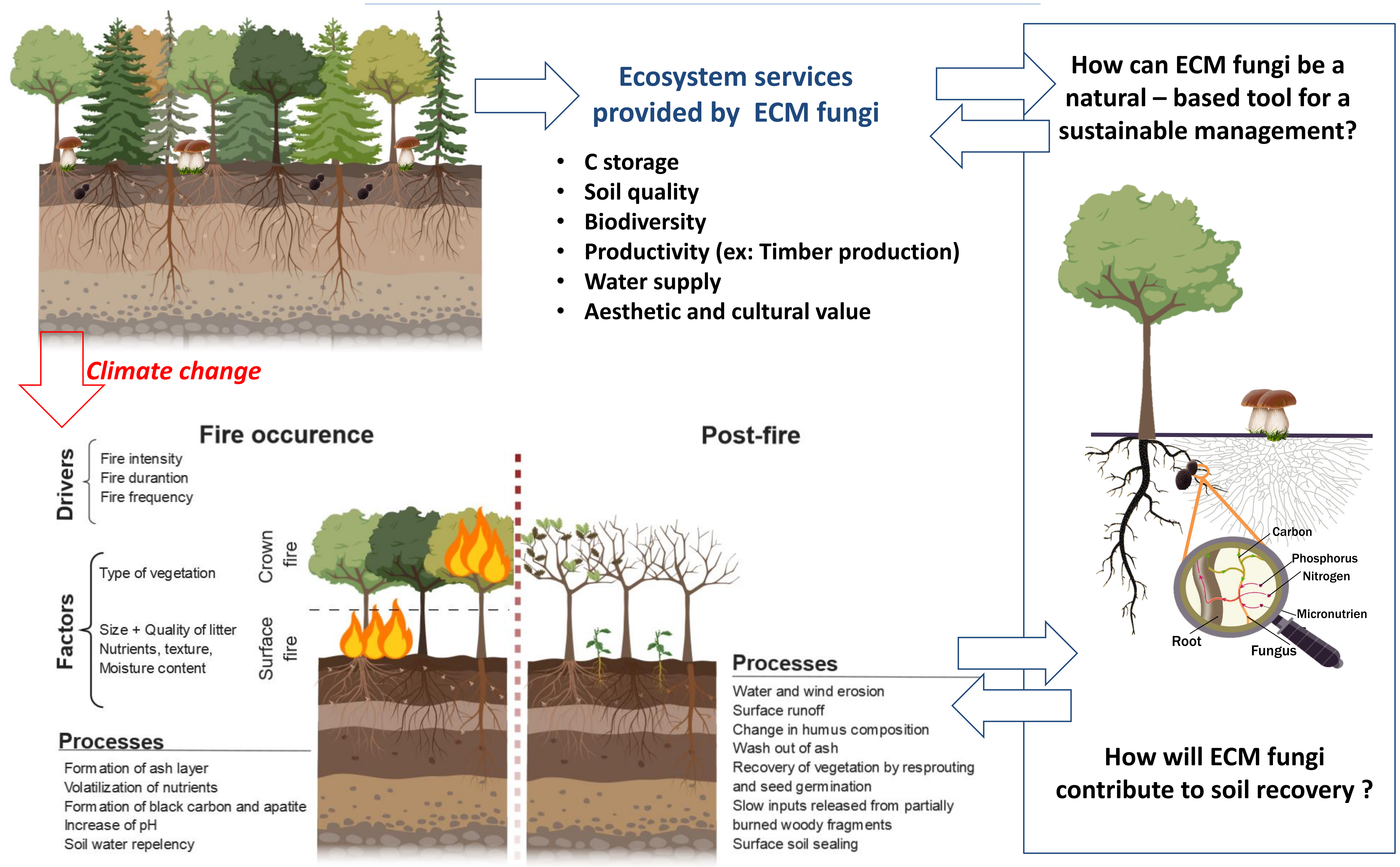
The impact of climate change, wildfires and the consequent loss of water and soil nutrient availability contribute to a decrease in biomass production. Therefore, it is urgent to create new strategies for climate change mitigation and post wildfire recovery, in order to achieve healthier and higher biomass production.

OBJECTIVES

The aim of this work is to provide new insights on a bio-based approach for forest recovery, understanding climate change disturbances effects on biomass production and how Ectomycorrhizal (ECM) fungi can contribute for a sustainable forest management, considering ecosystem services provided by ECM fungi and their hosts. These symbioses could lead to a more sustainable forest development, by promoting healthier and more productive forests and therefore leading to carbon sequestration and global change, namely due:

- cultivation of ECM fungi which can contribute to the recovery from multiple problems caused by climate change and wildfires;
- ECM fungi contribute to plant fitness under stressful conditions triggered by global changes;
- ECM fungi can act as soil stabilizers and remediators after a disturbance, due to their role in nutrient cycling, enhancing plant resilience and productivity.

OVERVIEW



EXPECTED OUTCOMES

This knowledge would enable us to acquire information about the effects of climate change and other natural disturbances on ECM fungi dynamics and biomass production, providing valuable scientific knowledge which can support decision-making in forest management planning and policy-making, for the benefit of stakeholders and forest managers.

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