

Proposed topic ICTA master thesis: **LITERATURE REVIEW REGARDING CULTURAL ECOSYSTEM SERVICES IN MEDITERRANEAN FORESTS.**

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Abstract:

LIFE BIOREFORMED (LIFE19 ENV/ES/000544) is an European project entitled 'Implementing a Mediterranean biorefinery to boost forest management through the production of added value products'. The main objective of the project is to boost the sustainable Mediterranean-forest management by upgrading an existing biorefinery using torrefaction and pyrolysis (TP) to produce renewable chemicals and fuels from forest biomass. This project promotes a local biorefinery concept capable of processing biomass for different end-uses producing compounds (antioxidants, sugars, aromas) and energy (solid biofuels). It will strongly contribute to the development of the bioeconomy helping to accelerate progress towards a circular and low-carbon economy in line with the EU Bioeconomy and Circular Economy strategies, by improving production of renewable biological resources and their conversion into biobased products and bioenergy. It will also contribute to enhance sustainable Mediterranean forest management, to reduce the dependence on non-renewable resources, to mitigate climate change and to create jobs and maintain the EU competitiveness.

One of the specific goals of this project is to monitor environment and cultural ecosystem services of the project demonstration areas and its adaptation to climate change, ensuring that this project contributes to biodiversity conservation.

Cultural services are defined as those non-material benefits that society obtains from ecosystems through spiritual enrichment, inspiration, cognitive development and reflection, wellbeing, identity and sense of place, cultural heritage enjoyment (cultural landscapes), aesthetic experiences, recreation and ecotourism activities and educational opportunities. In this sense, ecosystems become a source of knowledge and provide pedagogical values for formal and non-formal education (MA, 2005).

Cultural services (or *nonmaterial ecosystem services*, as proposed by Small et al, 2017), although are less tangible than material ones, are closely linked to regulating and supporting services and are highly appreciated in all societies. Their assessment can be performed indirectly by their classification into two overall categories: (a) wellbeing, referring to recreation activities, tourism/ecotourism and landscape; and (b) education, including pedagogical and interpretation activities and scientific research.

The objective of this master thesis topic is to carry out a literature review regarding cultural ecosystem services to assess the state-of-the-art of this topic, especially in the Mediterranean ecosystems.

Students interested in this topic, please contact with Neus Puy (neus.puy@ctfc.cat) and Roser Maneja (roser.maneja@ctfc.cat).