New green strategy for the extraction and chemical transformation of biocompounds of interest from agroforest value chains

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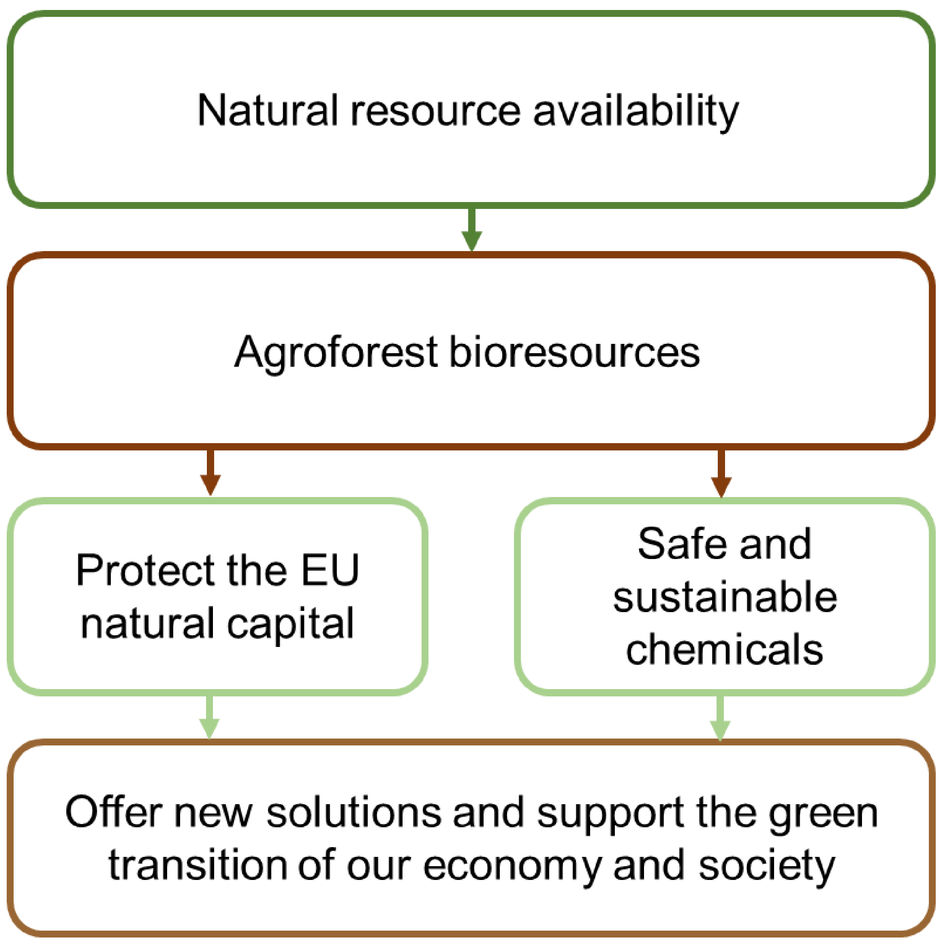
Introduction



Objectives

This work aims to promote the valorisation and efficient use of bioresources towards circular and sustainable bioeconomy, having been chosen *Cistus* sp., olive leaves and Pine resin. In this context, the goal is to extract biocompounds and to perform chemical modification from the aforementioned bioresources, with a high ecological, economic and social potential.

For this work, the following objectives were defined:

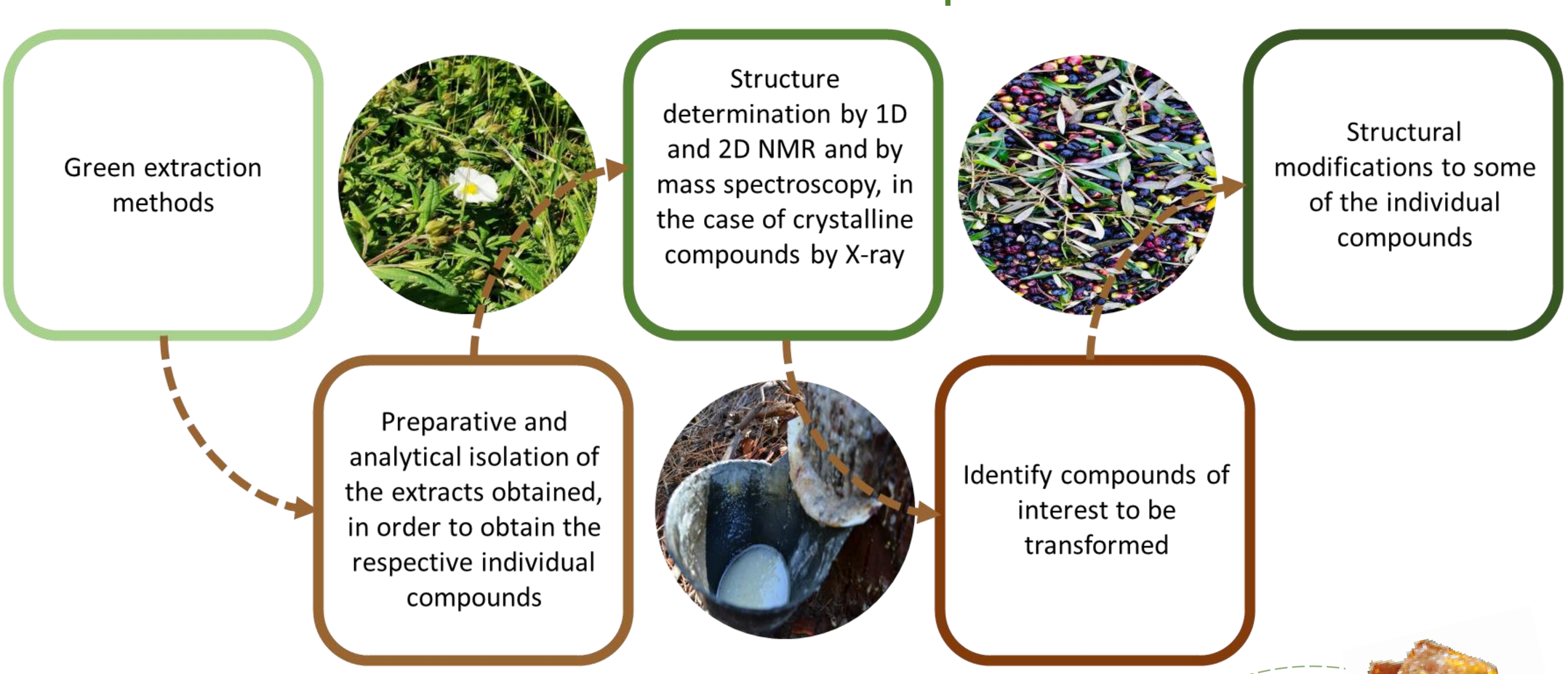
O1. Selection of sampling areas;

O2. Physicochemical characterization of bioresources;

O3. Extraction of biocompounds of interest; and

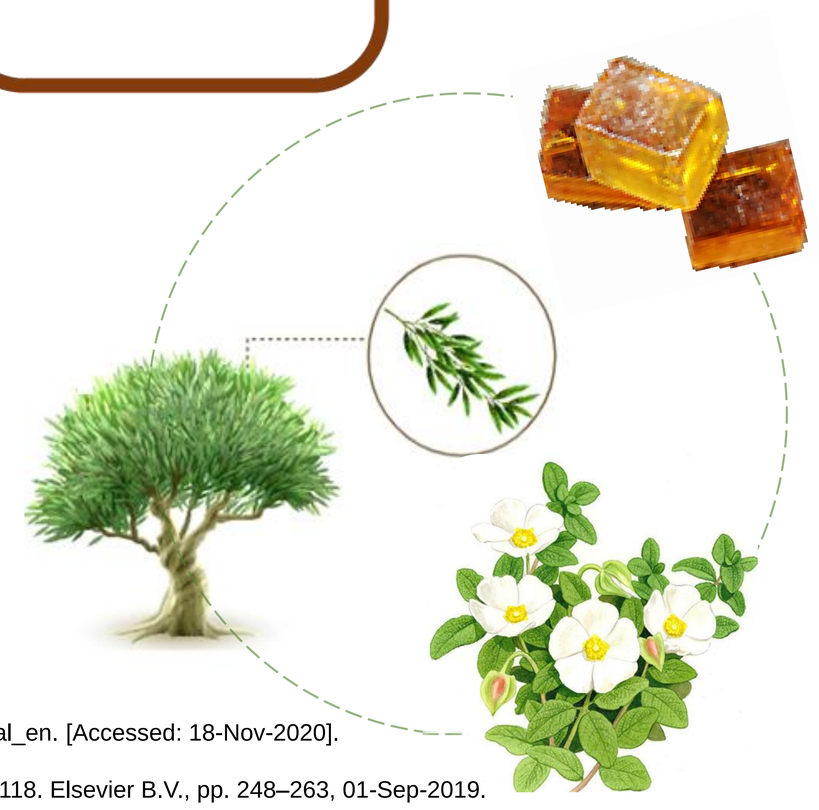
O4. Characterization and chemical transformation of target compounds and their environmental impact assessment.

Methods to be developed



Expected outcomes

- Valorisation and efficient use of bioresources
- Optimization and scale-up of the procedures currently adopted for the extraction of biocompounds
- Protection of natural capital, while contributing to the well-being of the general population



References:

"A European Green Deal | European Commission." [Online]. Available: https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en. [Accessed: 18-Nov-2020].

A. P. Ingle et al., "Bioresources and their significance," in Current Developments in Biotechnology and Bioengineering, Elsevier, 2020, pp. 3–40.

F. Chemat et al., "Green extraction of natural products. Origins, current status, and future challenges," TrAC - Trends in Analytical Chemistry, vol. 118. Elsevier B.V., pp. 248–263, 01-Sep-2019.

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