

## **REVINE project : regenerative agricultural approaches to improve ecosystem services in Mediterranean vineyards**

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### **Abstract**

REVINE is a 3 year European project funded by PRIMA programme which proposes the adoption of regenerative agriculture practices with an innovative and original perspective, in order to improve the resilience of vineyards to climate change in the Mediterranean area.

Regenerative agriculture ameliorates soil structure and microbial biodiversity that, in turn, leads to crop resilience against biotic and abiotic stressful factors. Moreover, enrichment of beneficial microbes in the rhizosphere, such as PGPR and PGPF, are known to trigger the plant immunity inducing the priming state. REVINE intends to improve the biodiversity in the vineyards by using multiple approaches, including: i) screening of tolerant grapevine genotypes; ii) consociation of the grapevine with profitable cover crops; iii) the use of cultivation practices able to enhance soil biodiversity and the beneficial rhizosphere microorganisms.

REVINE, by means of Regenerative Agriculture, intends to rebuild soil organic matter and restore degraded soil biodiversity. In particular, biochar is a carbon-rich substrate that has multiple effects and can be used as soil amendment. It increases soil water-holding capacity and nutrient-availability for plants, thus positively affecting plant growth and preventing water stress. Moreover, by improving soil's physical and chemical properties, biochar modifies microbial habitats and fosters the presence of plant beneficial microbes. Biofertilizers and amendments will be produced from crop residues.

**Keywords:** Regenerative agriculture, vineyards, soil microbial biodiversity, biofertilizers.