



Greek Use Case: Rehabilitating Degraded Soils



Key Information:

Location: Western Macedonia, Greece

Area: 20 hectares

Climate: Mediterranean/continental

Bio-based products: MDF (pseudoacacia), aromatic and medicinal essences, essential oils

Benefits:



Biodiversity enhancement



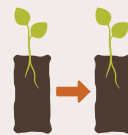
Improved soil quality and productivity



Circular use of biomass



Water optimised production



Replication potential



New regional business models

Main Challenges

Focuses on rehabilitating land degraded by former lignite mining due to heavy metal contamination and altered soil properties. These changes have reduced soil fertility, undermined stability, and heightened erosion risks.

Solution within MarginUP!

Apply phytoremediation with resilient species like black locust and lavender, along with biodiversity-boosting trees such as oak and chestnut. It aims to regenerate degraded soils while developing a bio-based value chain involving the wood, essential oils, and beekeeping sectors.



Robinia pseudoacacia tree. Photo: Andreas Rockstein

Stakeholders Engaged

- Local authorities
- Research institutes and academia
- Cooperatives, agronomists, and agroengineers
- Local SMEs and bio-based businesses
- Companies managing former lignite sites
- Consulting firms
- Technology providers

Interest Groups

- Environmental NGOs and civil society
- Wood products and bioeconomy industries
- Policymakers
- Vocational training and skills providers
- Investors in sustainable land use
- Just Transition Fund and EU-level institutions
- Communities in marginal lands

Replication Potential

Potential for former lignite or coal mining areas, particularly in regions undergoing economic and environmental transition. The replication model features adaptable plant selection, bio-based product development, and local value chains.

Project's Timeline

2023:

- Planted 1500 pseudoacacia trees, 2200 lavender plants, 70 oak trees and 70 chestnut trees.

2025:

- Collected wood samples from pseudoacacia for MDF testing.
- Plan to log pseudoacacia and begin first MDF production trials.

2026:

- Complete feasibility analysis and demonstrate the replicability model.

Expected Results

- Demonstration of successful soil rehabilitation using phytoremediation.
- First trials of MDF production using pseudoacacia wood biomass.
- Increased biodiversity through intercropping and tree planting.
- Enhanced knowledge of wood quality and usability for bio-based products.
- Clear identification of the support mechanisms and feasibility requirements for replicating the model in other regions.



The use case aims to produce MDF from pseudoacacia trees.



Essential oils and aromatic and medicinal essences.

About MarginUp!

The project is developing sustainable and circular value chains to produce bioproducts and biofuels from natural raw materials grown on marginal lands. By introducing climate resilient and biodiversity-friendly non-food crops on marginal and low-productivity lands, MarginUp! will increase farming system resilience, enhance biodiversity, and promote stakeholder participation.

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