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RESEARCH PROJECT

EMCOCLIM-VITI

In progress 01/01/2026 → 31/12/2028

Emerging Cool Climate Wine Regions: AgroEcological viticulture



Contact our coordinator



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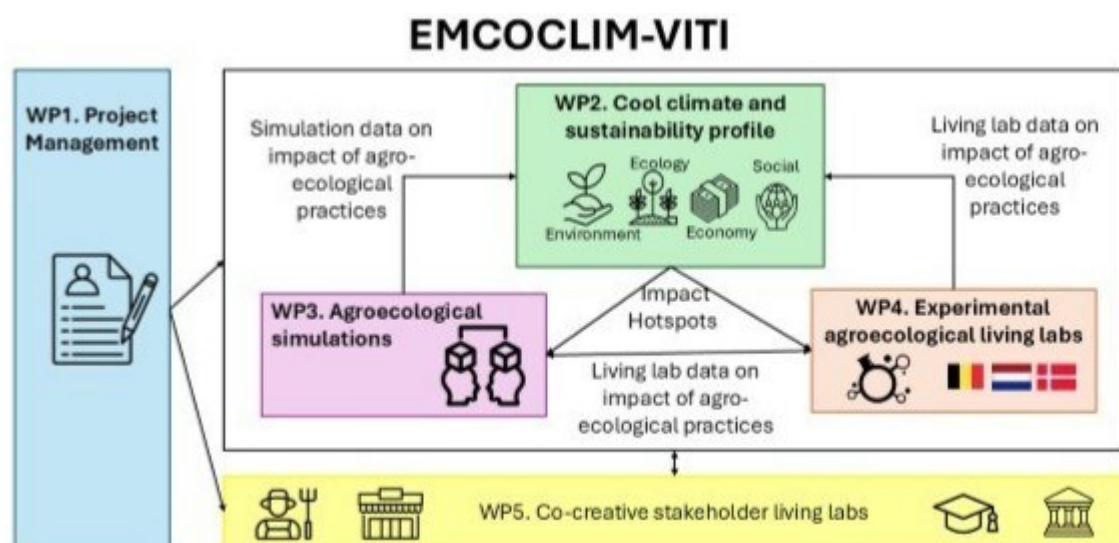
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Summary

Viticulture in cool climate regions is on the rise. However, unlike viticulture in the warm-climate wine regions, its sustainability management still has to start. The implementation of sustainable agroecological (AE) practices in cool climate viticulture can ensure that this emerging sector can thrive from both an economic and ecological perspective. To reach this goal, the EMCOCLIM-VITI project will systematically integrate AE practices into cool-climate viticulture through research, experiments, stakeholder engagement and innovative modelling.



A Living Lab (LL) approach ensures real-world applicability, while simulations in a digital twin refine strategies and enhance decision-making processes. In the LLs, conventional and AE-based wine production will be compared to construct a

regional AE profile and to identify sustainable and effective viticulture practices. By focusing on AE and resilience in cultivation methods and leveraging the potential of modern cultivars, the project strengthens environmental and economic viability, paving the way for a future-proof viticulture sector in Europe.

The project assesses AE in emerging cool climate wine regions of Europe (Belgium, the Netherlands, Scandinavia) to quantify both AE's benefits and trade-offs. The adoption of AE practices will first be tested on a Belgian case study. The pre-AE Belgian profile is the result of a co-creative multi-stakeholder scenario development (Scenario-Thinking method) and a Techno-Sustainability Assessment (including a social, economic and environmental part, based on the European PEF-CR). Applicable AE practices will be defined in alignment with EU Horizon and Farm2Fork directives and relevant regenerative and AE concepts. Based on the case study, the profile of Dutch and Danish viticulture will be established to analyse the broader northern viticultural regions.

A Digital Twin¹⁸ of a vineyard will integrate important data on weather and soil conditions and plant health. This Digital Twin will be used to simulate and test various AE scenarios, including scenarios created with stakeholder input (climate change scenarios and effects of different interventions).

The LLs play a pivotal role in testing AE measures in realistic conditions. The consortium's network of LLs quantifies indicators to minimise trade-offs and maximise ecosystem services³⁶ and economic viability of emerging viticulture in northern Europe. Scientific methodologies, tools, and datasets are formulated to identify best practices for long-term AE optimisation. Additionally, winemakers and scientists collaborate in field-based experimentations, ensuring practical application. This stakeholder engagement is crucial for validating these AE approaches and facilitating discussions among policymakers, researchers, and industry. By integrating scientific findings with practical insights, the project ensures the relevance and applicability of AE measures in cool climate viticulture. Throughout the research trajectory, the effective dissemination of knowledge and best practices among stakeholders is a planned and coordinated requirement. By fostering collaboration across scientific and industry sectors, it enhances awareness and promotes the long-term adoption of AE practices in viticulture.

Top image: Houwaartberg winegrapes. Source: Steven Van Passel

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