



**Practice Abstract 27 -
A Digital Decision-Support and Advisory Platform for
Sustainable and Efficient Vineyard Management
(Fellow@Field OC SIP)**

27. A Digital Decision-Support and Advisory Platform for Sustainable and Efficient Vineyard Management (Fellow@Field OC SIP)

Short Summary for Practitioners in English

Problem:

Small and medium-sized winegrowers across Europe face a paradox: digital tools that could transform their operations exist, yet remain out of reach. The barriers are multiple and interconnected. The upfront investment for hardware-based precision agriculture systems is often prohibitive for smallholders managing vineyards of 1 to 10 hectares. Even where tools are technically affordable, the gap between raw sensor data and actionable advice remains wide. A winegrower checking a weather dashboard still needs an agronomist to interpret what that data means for disease prevention this week. That agronomist, however, typically needs to drive to the vineyard before providing any recommendation, making the service costly and infrequent. The result is a sector operating largely on intuition and fixed-cycle spraying schedules. Chemical applications are made regardless of actual disease pressure. Vineyard visits consume time that could be saved with remote data access. And the knowledge exchange that would make the difference, the structured dialogue between a farmer and a trusted expert, happens too rarely and too informally, via phone calls and occasional photo messages over consumer messaging apps.

Solution:

Fellow@Field (F@F), developed by Atfield Technologies as part of the Farmtopia Sustainable Innovation Pilot programme, transforms the existing Winessense precision viticulture platform into a comprehensive hybrid advisory system. The core insight behind F@F is that data alone does not drive better decisions; what small winegrowers need is data plus accessible expertise, delivered through a tool they can actually use. F@F extends Winessense with four key capabilities developed through an iterative co-creation process with the pilot partner VINO Brkic d.o.o. in Bosnia and Herzegovina. First, an agronomist collaboration module enables seamless, structured data sharing between vineyard owners and remote advisors, including weather readings, disease risk model outputs, and activity logs, removing the need for an on-site visit before a recommendation can be made. Second, a photo diary allows farmers to document and share visual observations directly within the platform, replacing informal photo exchanges over messaging apps with a structured, searchable record. Third, a chemical treatment calculator provides real-time, condition-specific guidance on pesticide and fungicide preparation, addressing a documented problem where fixed-habit mixing led to concentration errors of up to 200 percent. Fourth, integration with the Farmtopia OpenWeatherMap module provides affordable weather data as an alternative to on-site weather stations, making the platform viable even for farms with minimal existing infrastructure. The platform is designed to work with IoT sensors from multiple manufacturers and is being validated for interoperability with three additional hardware providers.

Benefits:

-Reduced chemical use: integration of disease risk models and the chemical treatment calculator contributed to a reduction in fungicide and pesticide application, targeting a minimum 15 percent reduction against the baseline. Pilot at VINO BRKIC showed a reduction of 33% in 2025/2026, while the majority of our users achieve savings of 2-3 chemical treatments.

-Fewer vineyard visits required: remote data sharing and structured agronomist communication reduced the need for physical inspection visits, with a target reduction of more than 20 percent. Pilot at VINO BRKIC showed a reduction of 33% in 2025/2026, and very commonly users spend two times less time visiting remote sites.

-More affordable advisory access: by enabling remote consultation, F@F opens access to

agronomic expertise for smallholders who cannot justify the cost of frequent on-site advisors.

- Better water and input management: integration of localized weather data supports more precise treatment timing, with estimated water savings of approximately 1,000 litres per hectare.
- Improved farmer confidence: structured data access and expert-backed recommendations increase farmers' confidence in digital tools.

Practical recommendations:

For winegrowers considering a similar approach, the key recommendation is to start with data sharing before attempting full automation. The most immediate value F@F delivers is not algorithmic decision-making but the structured channel it creates between a farmer and a trusted agronomist. Even a basic sensor network combined with a collaborative digital tool produces better outcomes than either element alone. For technology providers and agronomists, F@F demonstrates that a marketplace model for remote advisory services is technically feasible and commercially viable in smallholder viticulture, provided the user interface is designed around the farmer's existing workflow rather than around the capabilities of the technology.

Return on Investment: Analysis based on experience of more than 150 users from all over Europe, shows that for every 1 EUR invested in the system, it usually pays-back 3-12 EUR over a 5-year period. Calculation assumes 5-hectare vineyard.

Further information

- Winessense: <https://www.winessense.com/login>

About this practice abstract and Farmtopia

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Farmtopia: The project is running from September 2023 to August 2026. The overall goal of Farmtopia (**GA No.: 101083541**) is to democratize digital farming to empower small and medium farms.

Website: <https://farmtopia.eu/>

Atfield Technologies d.o.o.: SIP leader, ADS provider

Website: <https://atfield.tech>

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