Competence Center “Weinbau 4.0”

Gefördert von:

Name of the Organisations Involved

- WFG – Wirtschaftsförderungsgesellschaft des Landkreises Emmendingen mbH
- ZG Raiffeisen eG
- ZG Raiffeisen Technik GmbH
- Intech GmbH & Co. KG

Challenges Identified

Regional winemakers face challenges such as structural changes, succession and skilled worker issues, climate change impacts, reduced spray consumption, uneconomical steep slopes, and fallow vineyards. In response, the "Weinbau 4.0" flagship project aims to support small-scale vineyards, addressing these challenges and ensuring the attractiveness of winemaking for the next decades. Led by the Economic Development Agency of the Emmendingen district, the project was recognized by Minister Peter Hauk on April 14, 2021, as a flagship initiative in the RegioWIN 2030 competition. With a total cost of around 5 million euros, the project receives approximately 3 million euros in funding from the state of Baden-Württemberg and the European Regional Development Fund (ERDF).

Goals and Solution

- The goal of the flagship project "Viticulture 4.0" is to increase innovation performance in viticulture, among manufacturers and suppliers, service providers, agricultural machinery mechanics and the trades through the establishment of a competence center and technological measures by the project's completion in 2027.This aims to enhance value creation and build regional expertise.
- The focus is on expansion of research and innovation capacities and the adoption of advanced technologies involving the development and implementation of prototypes, pilot plants, and demonstrators for showcasing bioeconomic technologies in the agricultural products sector.
- As a response to the challenges faced by small-scale wine-growing businesses, including issues like structural change, succession, skilled worker problems, and the consequences of climate change, this initiative aims to address uneconomic steep slopes and fallow vineyards. The objective is not only to enhance the attractiveness of the winemaking profession but also to boost the overall profitability of the industry. This includes measures such as health protection, as well as time and cost savings, among other strategies.
- Focused on advancing specific competencies, the initiative aims to enhance sustainability and promote renewable energy by concurrently utilizing wine-growing and photovoltaic areas (Agri-

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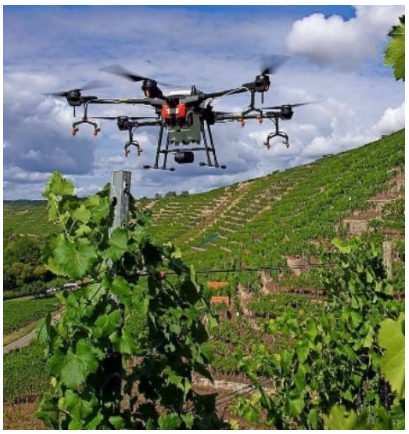
Photovoltaic demonstration facilities (Agri-PV/Viti-PV) are being developed and tested in viticulture).

- Additionally, the plan involves integrating sensors and automation for digital transformation in winegrowing, utilizing geoinformation and guidance from the districts. It also envisions strengthening regional cooperation in winegrowing through the establishment of a regional competence center, offering training and further education, public relations efforts, and fostering increased cross-border exchange in viticulture with Alsace.

Actions taken

To address the challenge of high investment costs in innovative technologies for small wine-growing businesses, plans include the development of innovation clusters for automation (tractors, robotics) and drones. Additionally, studies will be conducted on the development and implementation of dual-use photovoltaic systems in the vineyard (Viti-PV).



Images: Supporting drones operated at the wine growing facilities (© Ulrich Spitzmüller, Emmendingen)

Simultaneously, the flagship project is establishing the "Viticulture 4.0" Competence Center in Emmendingen, hosted by the Economic Development Agency (WFG). The primary objectives are to enhance regional collaboration, sustain winemaking traditions, preserve the cultural landscape, and foster knowledge transfer, user-oriented research, development, and innovation.

The Competence Center plays a pivotal role, organizing network meetings for Agri-Photovoltaics, supporting drone and automation innovation clusters, and facilitating technology collaborations. It hosts events that focus on advancements such as the simultaneous use of viticulture and photovoltaic areas (Agri-PV/Viti-PV) and automation/sensor technology.

Furthermore, acting as a regional hub for winemakers, cooperatives, and other wine regions, the Competence Center provides support for education, training, public relations, regional collaboration, and actively encourages cross-border exchange in viticulture with Alsace and other EU projects.

Benefits and Impact

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- The preservation of the cultural landscape, facilitated by the Viticulture 4.0 flagship project and its focus on steep slopes, is advantageous for both the wine industry and the region. This, in turn, has the potential to bolster the locally significant tourism industry.
- Through the planned automation of soil and vine care, as well as the utilization of drones in the RegioWIN flagship project Viticulture 4.0, a reduction in spray and spray consumption is anticipated. The EIP-Agri project 'Introduction of spray drones to steep-slope viticulture' demonstrated around 90% less drift for the spray drone compared to the baseline. Agri-PV systems not only contribute to CO2 savings but also generate renewable energy through space-saving dual use. Moreover, these innovative approaches benefit the environment and can contribute to maintaining the health of both winegrowers and citizens.

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